FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FEBRUARY, 1954

Proper venting and efficient fire fighting enabled New York firemen to bring this four-alarm fire in the Ebling Brewery on November 20 under control in one hour.

OHIO STATE UNIVERSITY

A CASE - SHEPPERD - MANN PUBLICATION

is Your Community protected

by the MOST EFFECTIVE resuscitating apparatus known to Science?

EMERSON Resuscitators

SIMPLE to operate, with no complicated adjustments.

SAFE for adults, children, or infants. There is no record of lung injury from the pressures used in thousands of cases in more than ten years.

EFFECTIVE The suction phase, alternating with the positive phase, helps circulation and can be of life-and-death importance, especially to victims in shock.

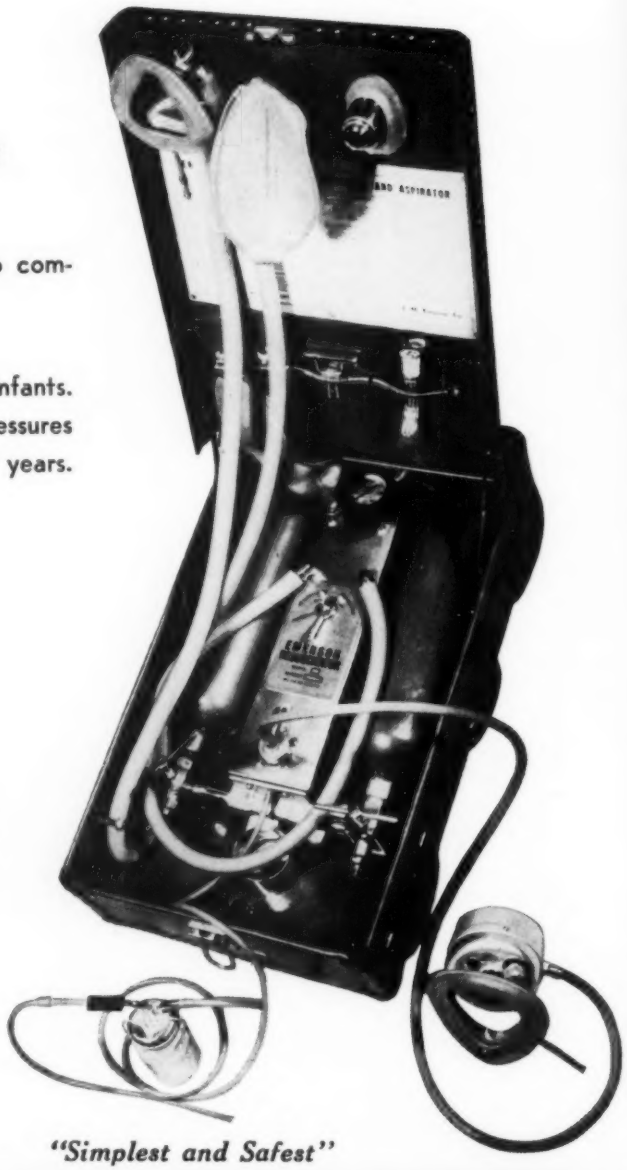
ACCEPTED by the American Medical Association for use by laymen (A.M.A. Journal, May 30, 1942). Relied on from coast to coast by thousands of leading hospitals and fire departments.

WRITE for our free

Medical Reference on Resuscitation

Information and Demonstration

Bulletin on a New Manual Method of Artificial Respiration



"Simplest and Safest"

J. H. EMERSON COMPANY

52 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

RECIPE for SAFETY!

Warning Signals for Safety

Federal Beacon Ray light

Federal "Q" siren

Fire Fighting Equipment

Manufactured by General Fire Truck Corp., Detroit Mich., on a GMC chassis. Has a 500 gal. 3-stage pump for both pressure and volume, 800 gal. water tank, Hannay electric hose reels and shatter-proof rear windshield. Protected by a Federal #17 Beacon Ray light on the cab roof and a Federal Q-2 siren on the front fender.

Take the normal ingredients of a gleaming, efficient piece of equipment, garnish them with a complement of the finest, trained crew and accessories—and to this fine array add the gleaming, crowning touch — Warning signals by FEDERAL.

Truly, here is a recipe unmatched for certain safety. This team of FEDERAL signals is distinctive and outstanding in its effectiveness. The famous Beacon Ray light's 360°, all-angle warning beam catches the eye, while the authoritative roar of the powerful "Q" siren pierces high-level traffic noises, alerting the ear instantly, and insuring *safe*, rapid arrival at the scene.

Federal's Beacon Ray light and "Q" siren are the finest pair of warning signals any department can have. BE SAFE—BE SURE

SPECIFY *FEDERAL* ON ALL NEW EQUIPMENT!

FEDERAL ENTERPRISES, Inc.

formerly Federal Electric Company, Inc.

8702 SO. STATE STREET CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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MEMBER
Audit Bureau of Circulations
Associated Business Publications

Viewpoints

THERE'S more to a fire than meets the eye.

● Ask six newspaper reporters to cover a fire—and you'll get six different viewpoints, and as many different stories.

● That isn't just because every fire has six sides—and it does—it is because none of us sees alike, thinks alike, reasons alike or writes alike.

● That's what complicates the job of editing an engineering Journal like FIRE ENGINEERING. We can't treat every fire report from everybody's viewpoint; about all we can do is research it, and we hope, present the story factually, and interestingly. And this calls for not only good reporting, but good researching! After research comes writing and editing, and then, perhaps re-writing and re-editing!

● Not every fire account included in these pages gets the full six-sided treatment—after all, many reports are straight from the horse's mouth—*the fire chief who fought the fire!* Most of our reports are from him and his chief officers. If they can't give us the facts—who can? But other accounts are composites of many interests, many "reporters"—local observers, insurance rating men, news reporters, fire buffs, apparatus engineers, photographers and just plain "sidewalk chiefs." But always, the *last word* is the fire chief or his assistants.

● We like to think of FIRE ENGINEERING as the "last word" in journalistic, engineering research, editing and publishing. We know it isn't. But we try to maintain the right perspective—the right viewpoint, the right sense of values—for our readers and advertisers alike.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York 18, N. Y., also publishers of *Water Works Engineering, Wastes Engineering*, etc. ¶Subscription price: United States and Canada, $3.50 a year; Pan-American and Foreign, $4.50; Single Copies, 40c. ¶Member of Audit Bureau of Circulations and Associated Business Publications, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879.

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A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

FABRILON

DOUBLE SURFACE JACKETS
PRESSURE SHOCK PROOF
SMALL COIL DIAMETER
SUPREME FLEXIBILITY

STRENGTH
LIGHTWEIGHT
MG
BLOW PROOF
COUPLINGS
10% LESS
FRICTION LOSS PER SECTION

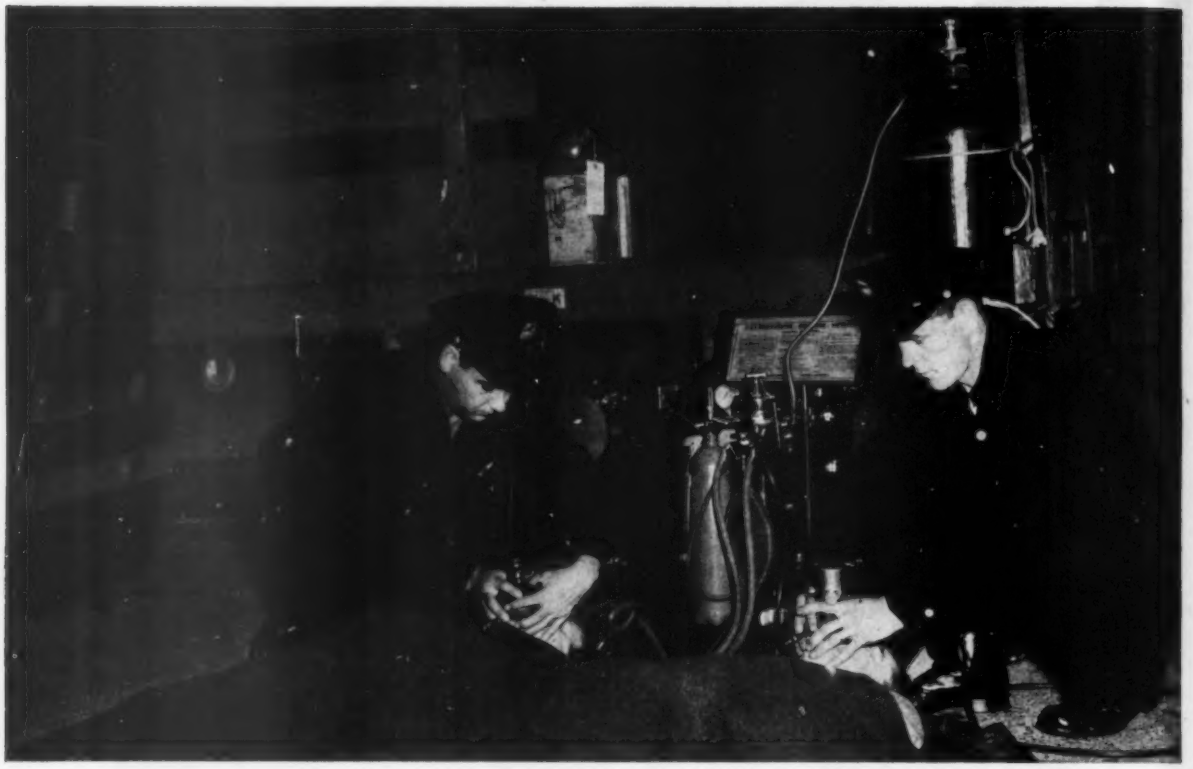
Here is 1000 feet of 2½" FABRILON hose of assorted types, ready for shipment. This is a fire hose in which every ounce of extremely high grade materials is combined by skillful design so as to give great strength per pound of materials used. It is so flexible you can tie it in a knot, yet so strong a terrific pressure shock will not burst it. In practical fire fighting, FABRILON means *no more pressure breaks, no more ruptured hose, no more blown couplings,* absolutely *safe* hose lines.

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

IN CANADA BICKLE-SEAGRAVE, LTD. WOODSTOCK, ONTARIO



Save More Lives With E & J RESUSCITATORS

- In asphyxiation cases the victim needs oxygen FAST; *the E & J breathes pure oxygen for the patient automatically, safely and effectively as long as necessary.*
- The victim may be severely injured or hard to reach for manual resuscitation; *the E & J touches only the face and can even resuscitate through a catheter if necessary.*
- The victim's throat may be blocked by unseen obstruction or faulty head position; *the E & J signals instantly if oxygen can't enter the lungs and it provides an aspirator to remove normal obstructions. When a partial obstruction cannot be dislodged, the E & J can be adjusted to usually by-pass it and get oxygen to the lungs at a slow but life-saving rate.*
- The victim's heart action may be weak; *the alternating positive and negative pressures as used by the E & J have been shown to benefit heart action.*

These are just a few of the reasons why Rescue Squads call the E & J their "greatest life-saving tool." Check these and many others at a free, full-scale demonstration right in your own Department. Just write or wire today to:

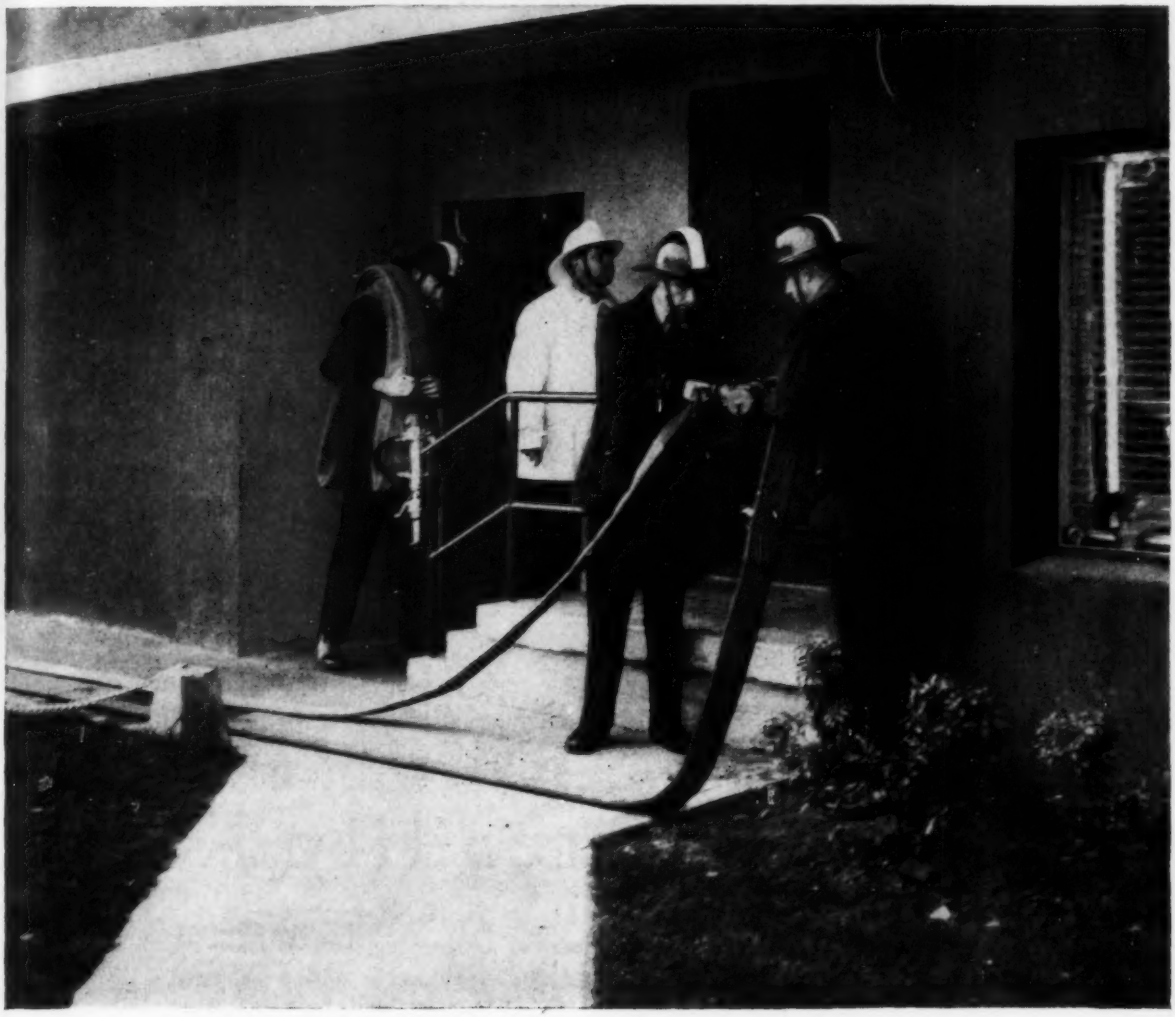
E & J RESUSCITATOR • INHALATOR • ASPIRATOR

Triple Model Illustrated

E & J MANUFACTURING COMPANY

Dept. 526-6, Burbank, California

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER



How B.F.Goodrich hose helps get a head start on fires

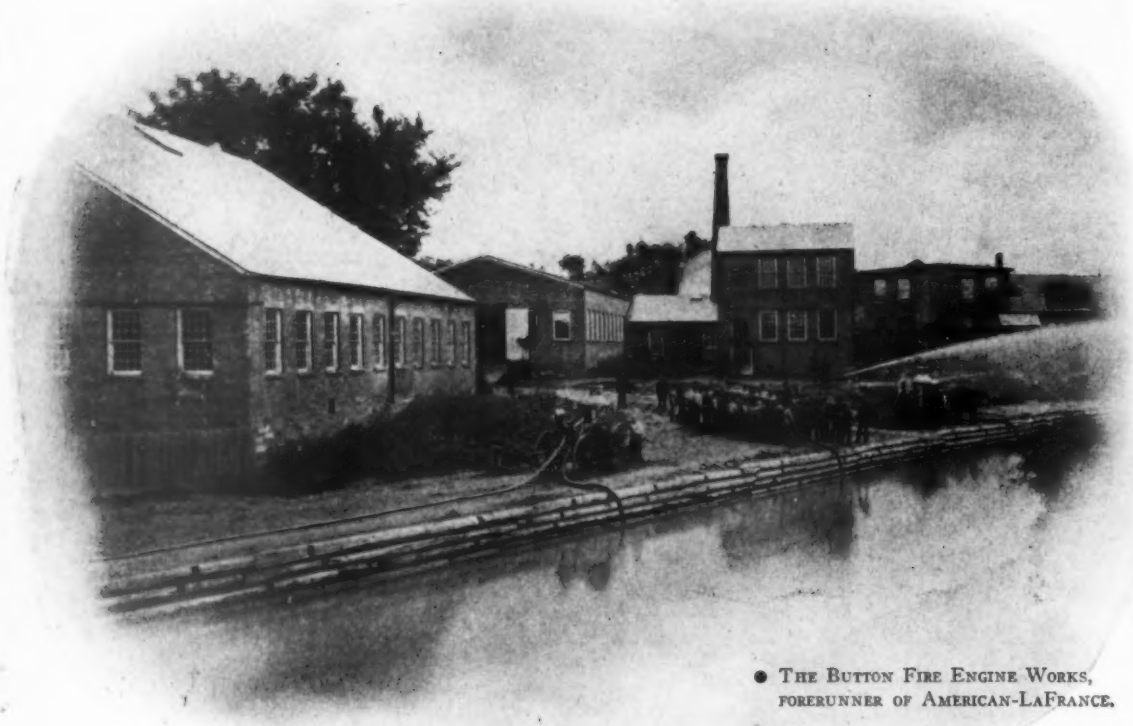
JUST by switching to 15% lighter Fire King hose, you can help your hose company get a head start on fires. With this improved B. F. Goodrich hose, your men can carry more hose faster to where it's needed, and save those vital first few minutes that make the difference between a quick out and a conflagration.

The picture above was taken at an apartment in Eugene, Oregon, where a fire on the eighth floor was extinguished with Fire King hose. Battalion Chief Robert A. Holland (in the white coat) says the flexibility, light weight and extra strength of B. F. Goodrich hose makes the job of fighting fires of this type faster with less work and strain on the firemen.

Fire King hose is 15% lighter, 50% stronger, 100% more satisfactory because of a chemically-produced fiber. B. F. Goodrich uses this fiber as "filler" cords—the cords that go around the hose and give it strength to take on top pressures. Actual service tests prove that Fire King, tested to 600 pounds pressure, is 50% stronger than standard fire hose, which is tested to only 400 pounds.

For the fire fighter these hose improvements all add up to an easy-to-handle hose that helps get the jump on an emergency. The cost of replacing your present hose is insignificant, compared to the cost of not taking the head start on fires that Fire King can give you. For full details, see your distributor or write: *The B. F. Goodrich Company, Dept. M-168, Akron 18, Ohio.*

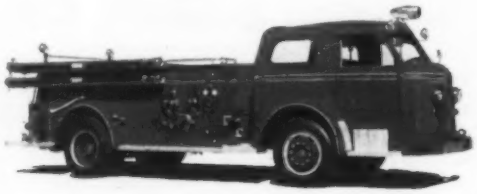
B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION



● THE BUTTON FIRE ENGINE WORKS, FORERUNNER OF AMERICAN-LAFRANCE.

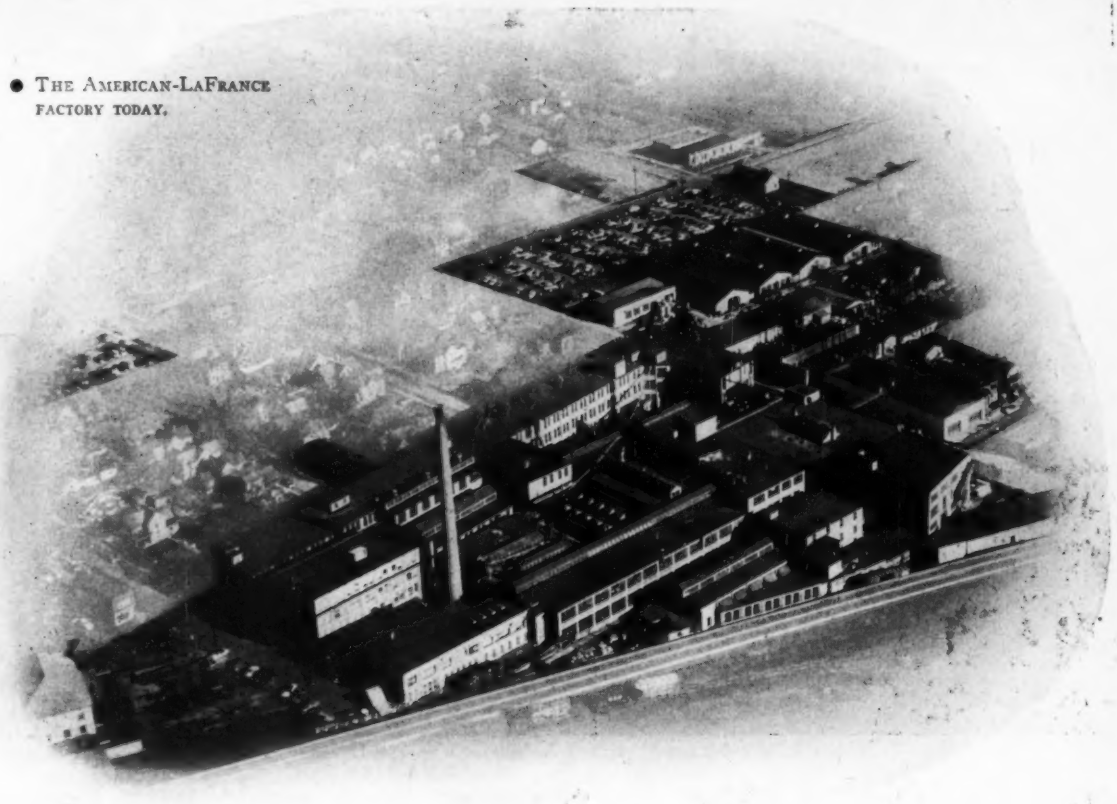
Growing steadily . . .

American-LaFrance-Foamite Corporation had its beginning in 1834 when the Button Fire Engine Works was established to produce hand or horse drawn hand operated pumpers. That was before steam fire engines were built in America. In 1845 the Button Fire Engine Works began to build steam fire engines, one of the earliest manufacturers. The Button Fire Engine Works later became a part of American-LaFrance with all manufacturing at Elmira, New York.



AMERICAN LAFRANCE

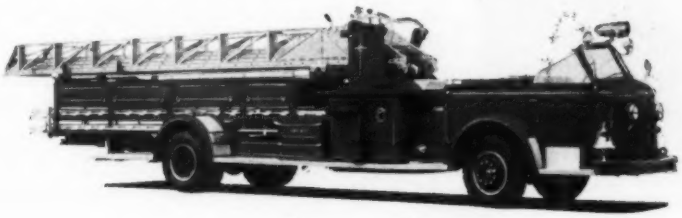
The Standard of Excellence



● THE AMERICAN-LAFRANCE FACTORY TODAY.

the better to serve you . .

Generation after generation of expert craftsmen have contributed their skill and "know how" to build the world's finest fire engines. The consistent dependability of American-LaFrance fire engines has earned the confidence of the fire service. This confidence has made possible the continuous growth of American-LaFrance. The original factory occupied 6 acres of land while today American-LaFrance operations require 24 acres for manufacture and testing.



AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, NEW YORK, U.S.A.

LAFRANCE FIRE ENGINE AND FOAMITE, LTD.

TORONTO, ONTARIO, CANADA

Ohio Fire Dept. Reports: Lighter . . . stronger hose made with Dacron* is easier to rack . . . easier to handle in action

Lighter, more flexible hose made with "Dacron" compared to conventional hose.

*REG. U.S. PAT. OFF.

"We've found the advantages of hose made with 'Dacron' are many . . . from easier racking and handling to mildew resistance," reports George Schlotterbeck, Chief of the Hamilton, Ohio, Fire Department. Above, one of the men of Company 7 demonstrates the superior racking capabilities of 600 ft. of hose made with "Dacron", over the same length of conventional hose.

"Dacron" polyester fiber is used as the load-carrying "filling" cord that reinforces the hose. The exceptional strength of this famous man-made fiber, plus its lightness and flexibility, results in a hose that offers strength with less bulk . . . that's at least 15% lighter . . . yet stronger than ordinary hose of the same diameter!

More than two years of field testing have proved the superiority of this new hose in action. It can now be purchased in volume. Before you place your next order, be sure to ask your supplier about hose made with "Dacron". E. I. du Pont de Nemours &Co. (Inc.), Textile Fibers Dept., Wilmington 98, Delaware.

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- More flexible
- Cuts loading time
- Saves space

DACRON

POLYESTER FIBER

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

The FOG-KAR

THIELE . . . DESIGNS
THE ULTIMATE IN COMPACT, DURABLE, ECONOMICAL AND EFFICIENT FIRE FIGHTING EQUIPMENT

COMPACT—Because of its highly efficient engineered design, there is no wasted space. A space-saving roof rack for ladders; storage space in side panels; all equipment placed advantageously. The water tank is mounted on truck frame between side panels with readily accessible manhole for filling and cleaning. Ample room in rear for seating and storage compartments.

DURABLE—Because it is expressly constructed to give long, trouble-free, efficient service. Only the best of equipment and materials are used.

1. Heavy duty doors and locks to seal in control panel.
2. All non-skid tread plate running boards and steps.
3. Finest of Goodrich fire hose.
4. Myers high pressure pumps and guns.
5. Chrome plated rails and handles.
6. Special metal housing under chassis, that captures heat from the motor, exhaust pipe and muffler, gives added durable protection against freezing.

ECONOMICAL—Because it eliminates many high cost operations that are not necessary and only add ornamentation and bulkiness. The "FOG-KAR" costs approximately ONE-HALF as much as other fog fighters.

EFFICIENT—Because of its dexterity plus rugged construction, the Thiele "FOG-KAR" is super efficient. Excellent protection for industry as it is *a one-man operation*, and its lack of bulk enables the operator to move in between crowded buildings. Perfect for rural districts. When fighting brush fires, the "FOG-KAR" can move over rough terrain and be operating while on the go. Less danger of frightening stock and damaging food. Indispensable for fire companies as the Thiele "FOG-KAR" is on the spot quickly, and with fog fighting, the household damage is appreciatively negligible.

COMES IN MANY VARIED MODELS AND CAN BE OUTFITTED WITH TANKS RANGING FROM 350 TO 1000 GALLONS. AUXILIARY TANKS MAY BE ADDED.

— PROMPT DELIVERY —

Write today for additional information about the "FOG-KAR," its many variations, and other THIELE Fire Trucks.

THIELE!

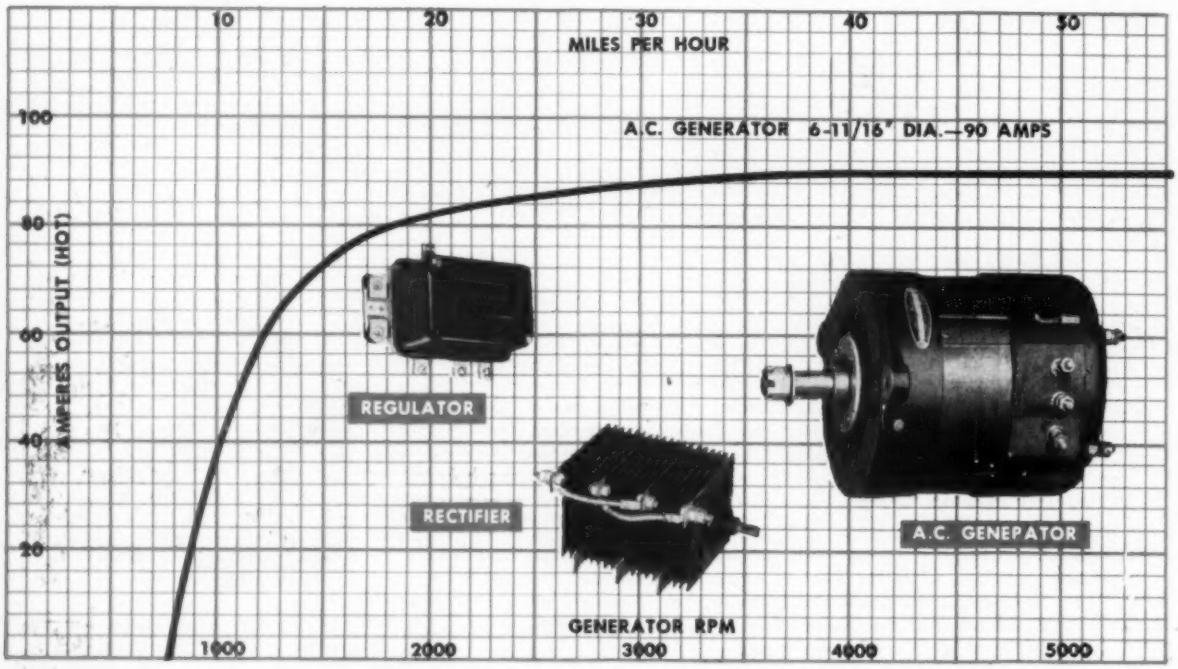
Builders of truck equipment since 1901

W. J. THIELE & SONS, Inc. **Pine at Cherry** **JOHNSTOWN, PA.**

Designers, Manufacturers and Distributors of Truck Bodies and Equipment

Power Packed and

HERE'S THE A.C. ANSWER TO EXTRA-HEAVY ELECTRICAL DEMANDS



DELCO-REMY

A. C. Generator, Regulator and Rectifier

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of fire engines, police prowl cars, big city taxis—other vehicles equipped with two-way radio, floodlights or any extra electrical units. Ample current reserve picks up discharged battery quickly in operation. Delco-Remy A.C. generators are suitable for use at all engine speeds.

With output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator, a matching regulator, and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages complete with installation instruction sheets for popular makes of cars and trucks are now available. The conversion job is simple. For further details and application data, see your nearest United Motors distributor.

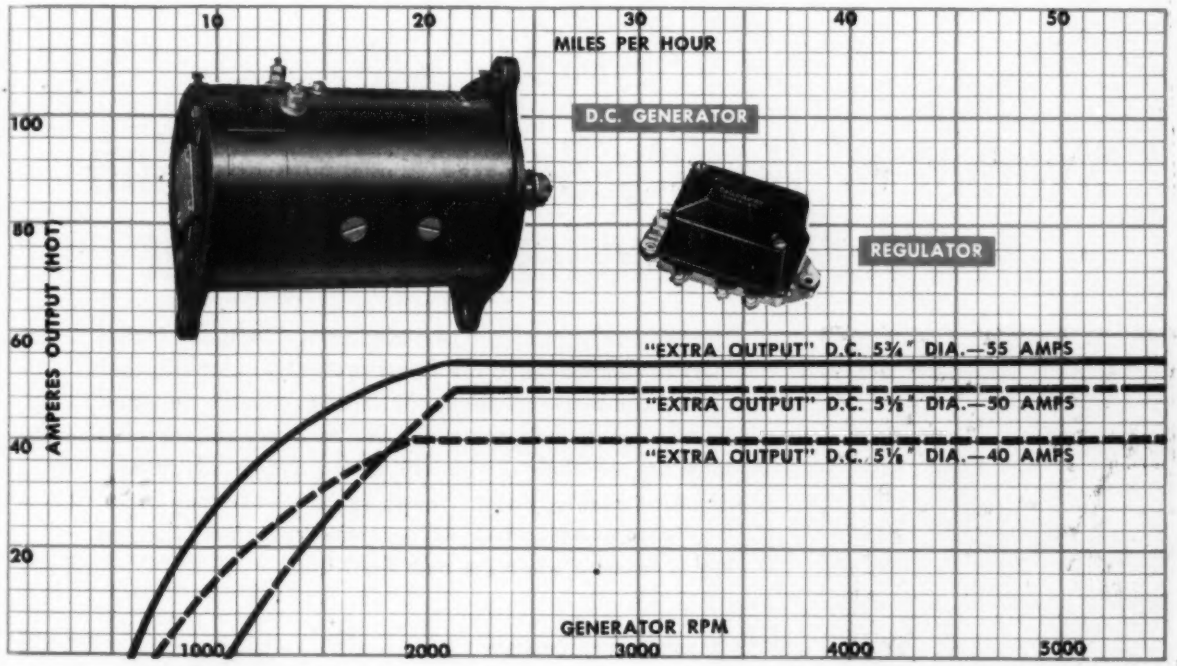
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Right for the Job

HERE'S THE D.C. ANSWER TO HEAVY ELECTRICAL DEMANDS



DELCO-REMY

Extra-Output D. C. Generators and Matching Regulators

Delco-Remy extra-output D.C. generators are an economical answer to the electrical needs of fire engines, suburban police cars, rural mail cars . . . other vehicles with additional lights, two-way radios, or other special electrical equipment in medium to heavy-duty service. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain.

DELCO-REMY 40-AMP GENERATOR has low cut-in, about 7 mph, charges from 11 to 17 amperes at curb idle . . . full output about 18 mph —for vehicles customarily used in heavy traffic.

DELCO-REMY 50-AMP GENERATOR has slightly higher cut-in, about 11 mph . . . full output about 21 mph—for vehicles customarily operated at higher speeds, with minimum slow driving.

DELCO-REMY 55-AMP GENERATOR has very low cut-in, about 6 mph; charges at curb idle from 20 to 30 amperes . . . attains full output at 20 to 25 mph—for vehicles customarily operated at low speeds with added electrical loads, such as city taxicabs and police cars.

For further details and application data, see your nearest United Motors distributor.

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION, ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Symbol of Quality-Service-Protection . . . for the modern fire fighter

The famous Midwestern Manufacturing Company trademark is your guide to the finest protective clothing that money can buy—garments that are specifically designed to help safeguard your men's life on every run—enable them to use their equipment to the fullest advantage. Superior quality, design, fabric texture and many exclusive features have made Midwestern Protective Clothing highly favored wherever men fight fires.

- **Exclusive Safety Features**
- **Tailored for Comfort**
- **Softer, More Pliable Materials**
- **Made of Natural Rubber**

We manufacture both rubber and fabric fire coats. In our vast selection of materials you will find the type of fabric exactly suited to your climate and needs. You can depend on the softness and flexibility of the high grade materials used to meet your most exacting requirements for lasting comfort and service under the most rugged conditions.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois

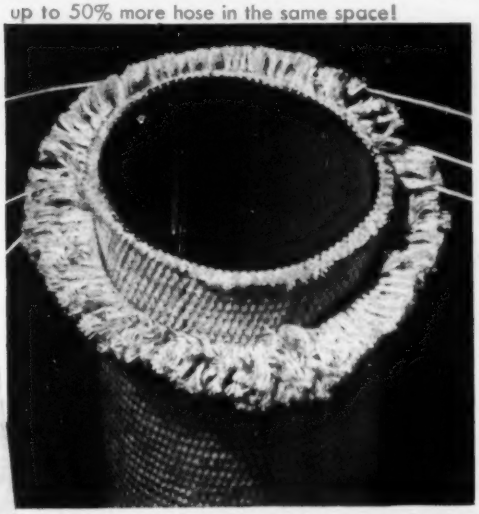
Manufacturers of the Famous **MACKINAW Coats**

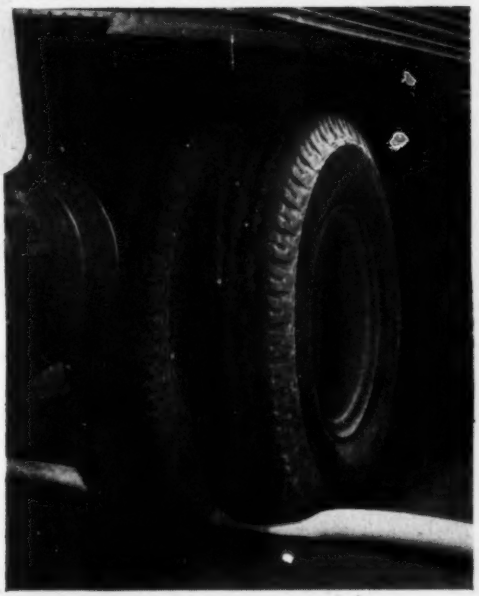
facts you ought to know about the new glass fiber fire hose!

Boston Woven Hose & Rubber Co. has introduced a revolutionary new fiber glass hose which is 20% lighter than conventional fire hose. Weighs only 81 lbs. per 100 feet! (Without couplings.) Boston Fiber Glass Fire Hose is superior to any you can use. Here's why:

1. **20% LIGHTER THAN CONVENTIONAL FIRE HOSE!** A fire fighter team can handle a 2½" hose with far greater ease.
2. **STRONGER THAN CONVENTIONAL HOSE!** Tested to 600 psi, withstands greater external abuse.
3. **GLASS FIBER YARN WILL NOT ABSORB WATER!** Hose remains light while in use.
4. **HIGHER FLEXIBILITY IN FREEZING WEATHER!** There's no water in filler yarn to freeze.
5. **MORE COMPACT . . . REQUIRES LESS SPACE FOR STORAGE!** 50 feet makes coil only 26" in diameter.
6. **EASIER TO COIL AND STORE!** Higher flexibility and lighter weight make after-fire chores easier.
7. **QUICKER DRYING!** Plastic treated fiber glass yarn absorbs no water.

Boston Fiber Glass Fire Hose is lighter, easier to handle, more compact. A fire truck can handle up to 50% more hose in the same space!





You don't normally run trucks over hose under pressure, but repeated tests and x-rays show that BOSTON Fiber Glass Fire Hose revealed no damage from such brutal treatment!

For More Information About Boston Fiber Glass Fire Hose Contact the District Office Nearest You

BOSTON: Main Office and Plant, P. O. Box 1071, Boston 3, Mass.
ATLANTA • 685 Metal Road N. E.
CHICAGO • 111 North Canal Street
DALLAS • 114 Express Street
KANSAS CITY, MO. • 926 New York Life Bldg.
MINNEAPOLIS • 744 Baker Building
NEW YORK • 30 Church Street
PHILADELPHIA • 210 Long Lane, Upper Darby

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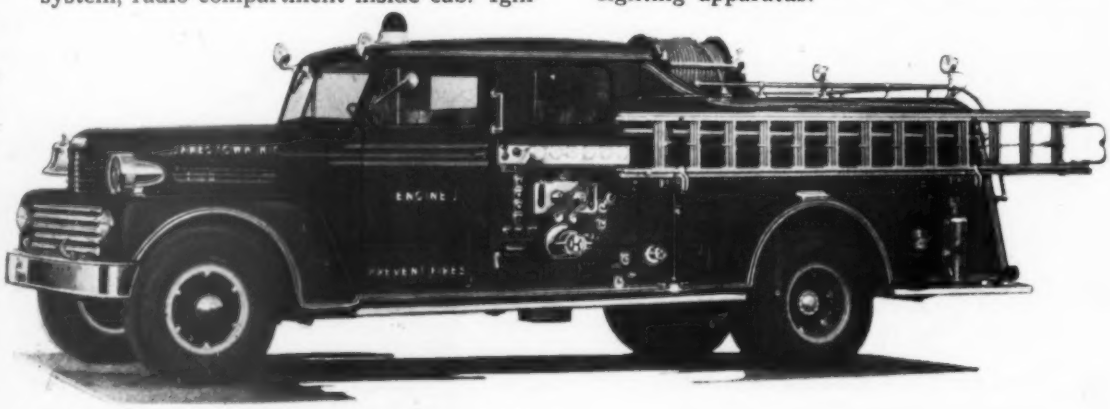
BOSTON BOSTON WOVEN HOSE & RUBBER CO., BOX 1071, BOSTON 3, MASS.

Pride of the Department . . .
Dependable Performer . . .
. . . A HOWE DEFENDER

In this triple combination 1,000 GPM pumper with five-man sedan type cab, a full crew will get to fires in Jamestown, N. Y., under maximum protection, ready for action with today's most modern fire fighting equipment. Powered with a 250 HP Waukesha slow-speed engine, this custom built HOWE DEFENDER has dual ignition, dual batteries, dual fuel pumps, a Leece-Neville 100 ampere high output generating system, radio compartment inside cab. Ignition system is operated by a single four-position switch. Batteries are mounted on a sliding tray for servicing. Booster tank, with removable top, has 300 gallon capacity. Exclusive Howe pump prime indicator. Hose carrying capacity is 1,500 feet of 2½" line. Six built-in compartments. These are among the features important to reducing fire losses which are available in a HOWE pumper. Look to HOWE first for the best in fire fighting apparatus!



Cab interior is completely, handsomely lined. Fully adjustable Bostrom driver's seat. Two men ride in front, three on full width seat facing rear. Three doors, two on officer's side. Sliding glass window installed in rear of cab. Our complete line includes the truck and equipment YOU need!

HOWE

Member FAM (Fire Apparatus Manufacturers Association)

HOWE

APPROVED BY THE
NATIONAL BOARD OF FIRE UNDERWRITERS

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Dept. FE5, 1406 W. 22nd St., Anderson, Ind., U. S. A.

MORE NEW TRUCKS NOW HAVE

INDIAN

FIRE PUMPS AS STANDARD EQUIPMENT THAN EVER BEFORE!

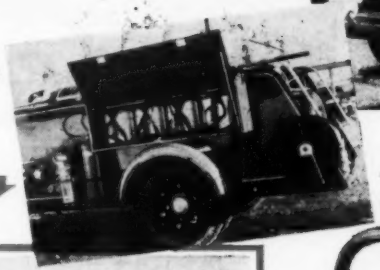
Santa Clara County, Central District, Fire Department (P. E. Van Pelt, Inc. Fire Apparatus & Equipment Company, Oakdale, California.)

THE purchase of new apparatus is a matter of major concern to every fire department. An ever-increasing number of brand-new trucks with **INDIAN FIRE PUMPS** mounted are now being delivered. Many truck manufacturers list **INDIAN FIRE PUMPS** as standard specifications.

The portability, convenience and efficiency of **INDIANS** has won high recognition. So, naturally, when a sizeable investment is made in new equipment, the buyer wants the back-pack pumps that do an outstanding job on all types of fires.

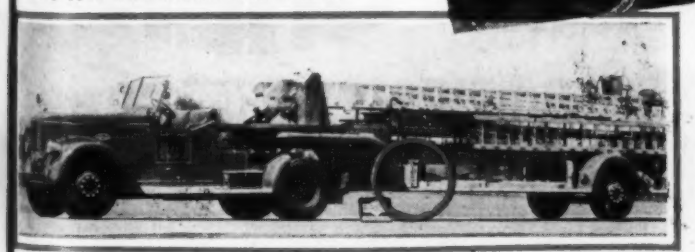
Shown here are just a few of the many new trucks which have been delivered with INDIANS as specified.

Built by Coast Apparatus, Inc., Concord, Calif. for Reclamation District 4. Note INDIAN FIRE PUMPS mounted.



This Peter Pirsch & Sons Co., Kenosha, Wisc., 85 ft. 3 piece hydro-mechanical duminum aerial ladder truck in service in the city of New York Fire Department, is equipped with INDIAN FIRE PUMPS.

New truck with INDIANS mounted in place as built by American Fire Apparatus Co. of Battle Creek, Mich.



All seams electric welded.

No leakage.

These photos prove the nation-wide endorsement of INDIAN FIRE PUMPS. Fire fighting authorities specify INDIANS on their latest and and most up-to-date equipment.

If you are ordering new apparatus, be sure it includes INDIANS . . . when buying more equipment, you can't make a better choice than INDIAN FIRE PUMPS.

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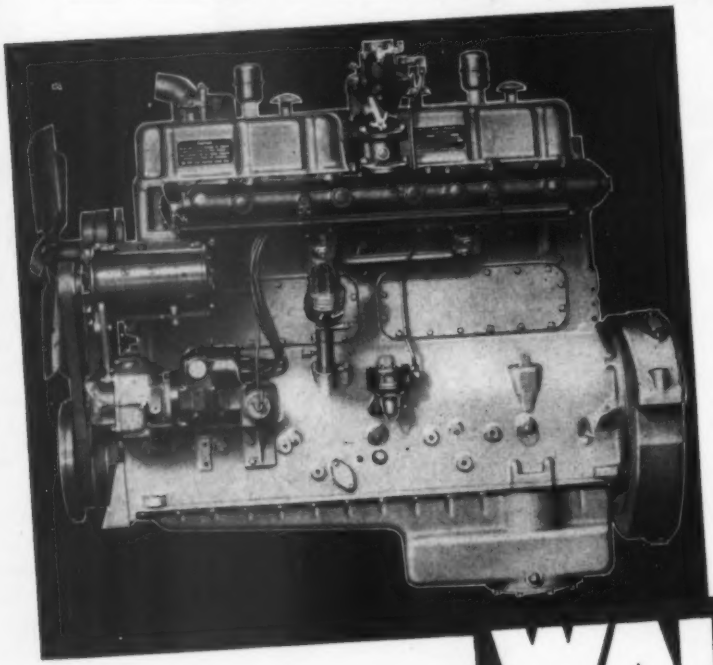

HIGH POWER OUTPUT with low maintenance

WAUKESHA

Model 145-GKB High Output FIRE FIGHTER Engine

six cylinders, 5¼-in. bore x 6-in. stroke
779 cu. in. displacement; 240 hp. at 2400 rpm.

Dual Ignition . . . 3½-inch, 7-bearing Hardened Crankshaft Counterbalanced and Vibration Dampened . . . Precision, Extra High Capacity Bearings . . . Full Pressure Lubrication . . . Overhead Valves with Stellite-faced Exhaust Valves and Seats . . . Removable Wet Sleeve Cylinders. Arranged for full electrical equipment and all modern accessories. Send for Bulletin 1594.

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Springfield, Ohio gets 1000 gpm Oren pumper powered with this Waukesha 145-GKB

On its acceptance test at Springfield, Ohio, this Waukesha-powered 1000 gpm pumper delivered 1400 gpm from draft and 1890 gpm from a hydrant supply. Custom built by the Oren-Roanoke Corp., Roanoke, Virginia, it has a 240 hp. Waukesha 145-GKB Fire Fighter Engine "selected for dependable power and low maintenance."

Waukesha-powered Orens are serving leading cities from Dallas, Texas, to Burlington, Vermont

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Drownings

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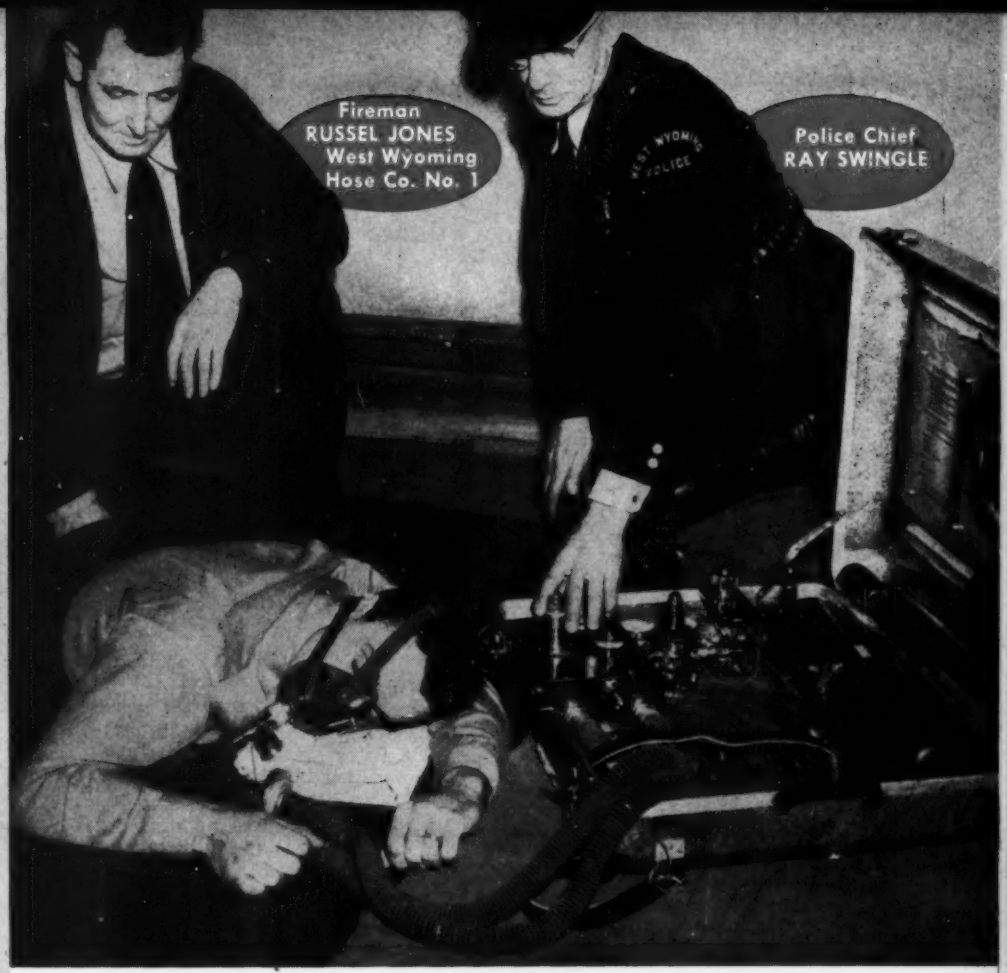

How the M.S.A. PNEOLATOR helps make West Wyoming, Pa. a good place to live—longer

William Kroski, like several other people in West Wyoming, probably read special meaning into this opening line from the area's leading newspaper: "If you reside in West Wyoming your chances of recovering from asphyxiation or severe heart attack are greater than in many communities of Wyoming Valley."

Mr. Kroski was found unconscious from gas fumes. Minutes after the alarm, volunteers from the Hose Company and the police arrived, and administered automatic artificial respiration with the M.S.A. Pneolator. Mr. Kroski recovered.

There were more successful rescues—two heart attack victims, a brain concussion case, a victim of acute indigestion, an asthma case and several non-emergency incidents. Add them up and you can see why the folks of West Wyoming feel that the Pneolator, applied by the expert hands of the local firemen and police, has helped to make their community a good place to live . . . longer.

Write today for details on the M.S.A. Pneolator, the modern, portable device accepted by the American Medical Association for automatic artificial respiration of asphyxia victims by means of intermittent positive pressure, without suction.

Note: The first few minutes after breathing has ceased are the most critical. Immediate application of manual artificial respiration should be started and continued until the Pneolator is in use.

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Call the M.S.A. man on your every safety problem . . . his job is to help you.

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EWING GALLOWAY

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WHEREVER YOU LIVE, you recognize this view of Paul Revere's statue and the Old North Church in Boston. And Boston recognizes the Leece-Neville Alternator ... it is doing a great job every day on that city's fire equipment.

This is just one of the many cities where Leece-Neville Alternators are helping fight fires and save lives. You'll find them in New York, Cleveland, Denver, Dallas, Montreal, Quebec and hundreds of other cities, large and small, here and abroad.

It's easy to find the reason for this wide acceptance of the L-N Alternator. More than eight years of performance on many thousands of vehicles has proven the advantages of the Leece-Neville Alternator System in place of the conventional d.c. generator.

Two-way radio operation is surer and clearer ... when seconds count, that's vital! With 25 to 40 amperes idling and full current output from 18 m.p.h., siren, lights, radio and other accessories are carried by the Alternator, saving the battery for starting only.

Installation of a Leece-Neville Transformer with the Alternator gives your equipment a source of 110 volt power. You can plug in standard flood lights, searchlights, portable saws, drills and other hand tools. Send for special Transformer folder.

There are L-N Alternators for 6 volt systems with capacities to 95 amperes; for 12 volt, up to 180 amperes; and for 24 volt, to 80 amperes. Be sure to specify Leece-Neville Alternators on your new equipment. Write The Leece-Neville Company, Cleveland 14, Ohio.

Custom-Engineered Electric Equipment Since 1909

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proved by performance for over 8 years

Another major advancement!

FROM THIS NEW, MODERN PLANT COMES AN EVEN FINER AHRENS-FOX!

One of the first Ahrens-Fox pumpers to be manufactured in our new plant—a 750 g.p.m. Centrifugal-type, Triple Combination Pumper recently delivered to Company No. 1, New Milford, N.J.

During the past year, the demand for Ahrens-Fox Fire Apparatus has been so great that our Cincinnati manufacturing plant was hard pressed to maintain production schedules. To relieve this condition, and to gain new and greatly enlarged facilities, a major portion of the manufacturing of Ahrens-Fox apparatus has been transferred to the ultra-modern, superbly equipped plant shown above.

Located in Sidney, Ohio, this new plant is *ideally* suited for fire engine production. Its advanced, precision production equipment will enable us to provide *faster* deliveries of *even finer* Ahrens-Fox pumpers than was ever possible before!

All design, manufacturing, quality control and assembly operations remain, as always, the *complete responsibility of Ahrens-Fox Apparatus Engineers*—long experienced in manufacturing *superior* fire equipment. In addition, an expanded service and parts department in Cincinnati is now geared to provide faster-than-ever service to our many customers.

We at Ahrens-Fox are proud of the confidence that the fire fighting service has placed in us—confidence shown by the *repeated purchase* of Ahrens-Fox equipment—that has made this expansion program possible. And never before in the long history of Ahrens-Fox has such confidence been more justified than it is today! So before you invest in any fire apparatus, be sure to investigate the Ahrens-Fox!

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Sales Offices: 1638-1658 Central Ave., Cincinnati 14, Ohio

Plants at Cincinnati and Sidney, Ohio

Capt. Himes pushes a button to open doors; electric timer sounds a warning and automatically closes them.

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"Our doors work so perfectly we never give them a thought," says Captain Howard Himes, Anderson, Indiana. "They were expertly installed by Overhead Door Corporation nine years ago and open today just as they did when new.

"Furthermore, the electric timing device which closes the doors automatically after the equipment leaves is a wonderful economy feature. I figure it saves more than enough on heat to pay for the doors."

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Specify The "OVERHEAD DOOR" when planning new stations or modernizing present ones. Assure top performance, save time and fuel! Write for details today.

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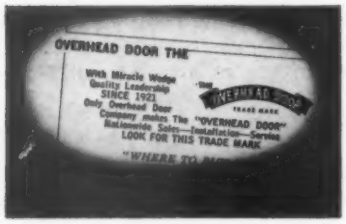

Look for this famous trade mark in the yellow pages of your telephone book and call your local dealer for full information.

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Half the weight of most couplings

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Independent laboratory tests show Forgex up to 100% stronger than other couplings

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LIGHTWEIGHT DROP-FORGED BRASS COUPLINGS

When you order hose — specify FORGEX couplings. They cost no more and they're better.

Specifications

A. 3 Rockerlug on 2½"
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Bump that assures positive results

When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

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With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

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"For obvious reasons we are continuing to purchase G-E equipment in our expansion program."

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IN OPEN BIDDING for communications equipment to guard New York City's critical up-state watershed areas and to add backbone to their municipal defense efforts G-E won on all counts. G. E.'s promise of dependable performance in any emergency *and* its reputation for maintenance economy were outstanding. Today, those promises are facts thoroughly respected and appreciated by New York's officials.

Take note of these facts and the growing preference for G-E! Examine the communication element of *your* defense preparations. The CAS* man in a local General Electric office will help you evaluate its strength. Call him today, or mail the attached coupon!

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Please have a G-E CAS* man call with complete information on General Electric 2-way radio equipment for civil defense.

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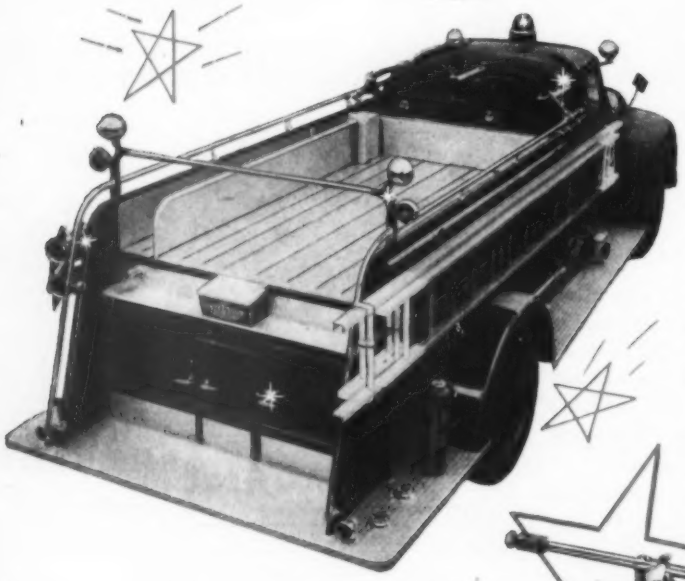

These pictures tell a story you can "read" without words! Examine them — or look over any piece of American Fire Apparatus. You'll see engineered features that sparkle with ingenious advanced design — that give you *exclusive, practical advantages in fire-fighting effectiveness.*

From bumper to rear step, American Fire Engines are built to fulfill *your* requirements. *You* select the chassis you want. *You* select a powerful, versatile Barton-American Front-Mounted Pump or Multi-stage Midship Pump. And *you* command a choice of open or closed cabs and many other details*.

For full description of the features that are "engineered for you", contact your American Fire Apparatus representative!

***Including famous Barton Super-Fog Gun!**

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"Always Pioneering with Better Engineering!"

two common-sense safety rules:

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SAFETY IS WORTHLESS...
unless it is absolute!

Whenever your hose comes into contact with oil, grease, dirt or other corrosives harmful to fabric or rubber, wash it immediately in *Bi-Kleen!* There is no such thing as "fairly safe" hose. *Buy* good hose and *keep* it good—with non-poisonous, non-toxic *Bi-Kleen!*

Bi-Kleen* is a new emulsion-type detergent designed *exclusively* for cleaning fire hose. It keeps the jackets inspection-white, keeps your hose cleaner, *safer, longer!

For the fire house and apparatus, too, *Bi-Kleen* is excellent for removing road tar, oil and grime. No harmful alkalis—rinse your chamois in *Bi-Kleen!*

Manufactured exclusively for the Bi-Lateral Fire Hose Company by the makers of PREV-ESSENTIALS CHEMICAL COMPANY.

FIRST AGAIN:

***Bi-Lateral! First** to recognize the need for and construct fire hose with the Bi-Lateral feature.*

***First** to change pin lug to rocker lug couplings.*

***First** to offer FREE fire hose record cards to fire depts. They are still available.*

***Now First** to give you a safe detergent to keep fire hose safe—Bi-Kleen!*

Bi-Lateral FIRE HOSE CO.

20 N. WACKER DRIVE, CHICAGO 6, ILLINOIS

"The solid stream will continue to have a limited degree of usefulness but it is destined to be the secondary form of application in controlling and extinguishing fire. Progress in the tactical employment of water on the fire-ground demands that the primary form of application be that of finely divided particles."

"Had we kept to the old method of lots of water and straight streams we would have used barrels and barrels of water and perhaps would have lost the entire house. While we are not telling anyone what to use, we are firm believers that the fellows talking about fog know their fire-fighting and hope that more fire departments give it a try."

These are your words about water-fog fire fighting

*Actual statements by fire chiefs

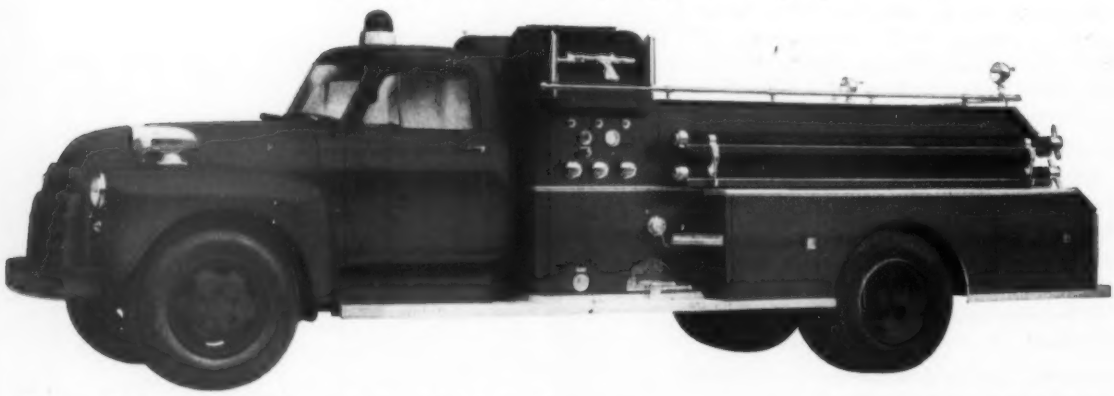
"This type of equipment (water-fog) is coming into common use in practically all of our fire departments."

"In general, the high-pressure nozzles on ¾ inch high-pressure hose reduced the temperatures much faster than the 1½ inch nozzles employed, and which were discharging at approximately the same GPM."

"We were called out to a house that was one mass of flames on the inside. The only exit for the smoke was via a fireplace chimney. Upon arriving three firemen were present. I, being the only man who had experience, set the truck, grabbed the nozzle, rushed up to the house, put the gun through one pane of glass with full fog. All flame went out as soon as the fog hit; then we opened the door and went in to make sure no more fire would ignite, using a total of 25 gallons of water."

*Sources available upon request

BUT here is the last word in high-pressure fog fire fighting



The 1954 John BEAN *high-pressure fog* FIRE FIGHTER

Can be mounted on most standard truck chassis

For complete specifications and the amazing success story of high-pressure fog write John Bean.

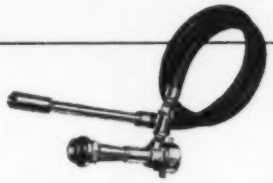
JOHN fmc BEAN

John Bean Division, Dept. 126, Lansing, Michigan

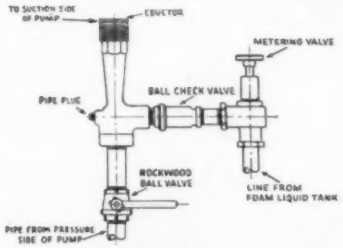
ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTER

A Product of Food Machinery and Chemical Corp.

This Rockwood equipment puts Rockwood FOAM to work for you —

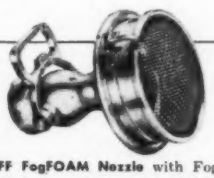


Foam Eductor introduces Rockwood FOAM into hose lines for use with Rockwood type FFF FogFOAM Nozzles. Connects discharge gate of fire trucks to hose line — hydrant to hose line — or one length of hose to another. In 1½" and 2½" sizes. Operates from 75 to 175 p.s.i. at Eductor inlet. Approved by Underwriters' Laboratories, Inc.



Around-the-Pump Proportioner Model Dual "B" automatically feeds FOAM into hose lines, assures accurate mixing. Used when pressure is maintained at pump. Operates in range from ¾" booster lines to 2½" hose lines. Maximum discharge 400 g.p.m. Custom engineered proportioning systems for fire trucks, crash trucks, etc. also available. Write for details.

Type SG-60 FogFOAM Nozzle with FF extension features FogFOAM and solid FOAM stream discharge. Performance for FogFOAM — 450 g.p.m. at 100 p.s.i. — for solid FOAM stream 500 g.p.m. at 100 p.s.i. Approved by Underwriters' Laboratories, Inc.

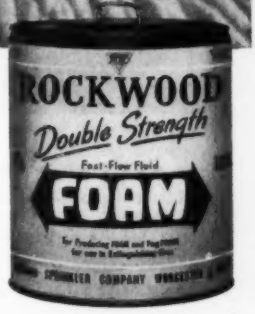


Type FFF FogFOAM Nozzle with FogFOAM screen discharges wide pattern of FogFOAM. Also available with shaper to discharge long solid FOAM stream. For 1½", 2½" and 3½" hose lines. 2½" size discharges 200 g.p.m. at 100 p.s.i. Approved by Underwriters' Laboratories, Inc.

The Evening Bulletin, Philadelphia

Gasoline Fires Quenched Quicker

Put fire-fighting punch into ordinary water! Three parts of Rockwood Double-Strength Fast-Flow Fluid FOAM mixed with 97 parts water produces the flame-smothering FOAM blanket above. Spreads rapidly even at sub-zero temperatures. Seals off combustible vapors, flows freely around construction. Quickly re-seals if broken. A boon to fire-fighters!



APPROVED BY UNDERWRITERS' LABORATORIES, INC.
Comes in 5 gallon cans or 50-gallon drums.

Standard Straight Foam Play Pipe and FOAM Pick-Up Tube discharge FOAM from 1½" hose line. Discharges 60 g.p.m. at 100 p.s.i. Range: approximately 55 feet. Approved by Underwriters' Laboratories, Inc. and FML.

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Portable Fire Protection Division
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Please send me your illustrated booklet on Rockwood fire fighting products.

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Engineers Water . . . to Cut Fire Losses

How much a box per person for the small community?

Let's start with a community of less than 50,000 people.

Would you guess that a Fire Alarm System might cost $2.00 a person per year? Or would you say $5.00 a box per person?

A survey of several communities shows that the *average annual cost* for a municipally-owned Fire Alarm System is only 75¢ per person. And that figure includes maintenance of the entire system.

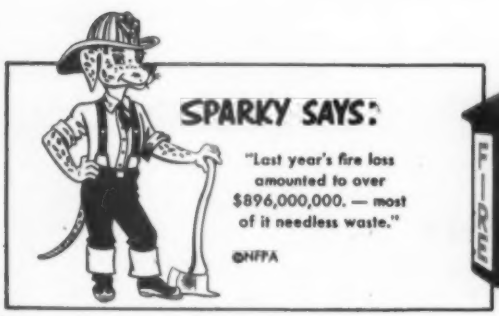
Looking at it another way, a single fire doing $40,000 worth of damage could cost more per person than the Alarm System which could have reduced or completely eliminated the loss.

For a survey of your community's Fire Alarm needs, get in touch with Gamewell. The survey will cost you nothing unless and until you buy materials or services from us.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

In Canada: Northern Electric Co., Ltd.



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FEBRUARY, 1954

FIRE ENGINEERING

VOL. 107, NO. 2

With the Editor

Fire Service Down-Graded! Last month, representatives of the nation's Fire Services were informed, to their amazement, that the Fire Services Division of Federal Civil Defense Administration was to lose its identity and be combined with a nebulous "rescue" unit, under a new banner: "Fire and Rescue Division."

On the surface, this meant little to the Fire Services or to the civil defense world at large. Fire fighters, if they thought about it at all, doubtless hoped the step might presage some better solution to the heretofore complex and confusing question of just what is civil defense rescue, and who's going to perform it, and with what?

But as the facts of the shift were checked, it was disclosed that the unheralded action of F.C.D.A., far from being a *step up* for the Fire Services, was in reality a *down-grading* in the civil defense set-up. Instead of the Fire Division taking on and concerning itself with rescue, the plan apparently is for an unorganized "rescue service" to take over and absorb the healthier, more successful Fire Services Division, so capably administered by Kyle Laughlin and a handful of willing workers.

Instead of a merger in the interest of better, more scientific, and efficient national and local fire defense, the only possible purpose of the move, it would appear, is to pump some life blood into a weak and wavering Federal "rescue" unit by shackling it to one F.C.D.A. division that has admittedly done an outstanding job.

Instead of designating the man who has won the respect and confidence of fire fighters from coast to coast, Kyle Laughlin, to head up the new Division, it is reported that he is to be subordinated to some one unknown to the Fire Service, and unfamiliar with its needs and objectives.

As presently confusingly constituted, civil defense rescue activities are of the *heavy* rescue type, such as tunneling, shoring and digging, coming within the engineering and contracting categories, as differentiated from *light* rescue which has been and will be a function of the Fire Service.

The combination of fire and rescue on the Federal level attempts to set a pattern which is not acceptable to the Fire Services. It breeds further confusion, rather than providing a solution to the old problem of civil defense rescue. It cannot help but imperil the smooth functioning of the Fire Services in all civil defense plans and programs.

The ill-conceived move, in effect, not only pushes the Fire Services even lower on the F.C.D.A. totem pole, but removes them still further from access to the policy-making eschelon of the Federal Civil Defense Administration.

In November, when F.C.D.A. Executive Assistant Administrator Harold Aitken asked key members of the Fire Services who were attending the fire conference at Olney, Md., for recommendations on improving civil fire defense, he emphasized the importance of the nation's fire forces. Director Val Peterson has repeatedly done the same.

Chief Henry Thomas, President of the International Association of Fire Chiefs, and Horatio Bond, Chief Engineer of the National Fire Protection Association, following a recent call on Director Peterson, registered their written disappointment over the change with the Director, and stated the matter would be brought before the Boards of Directors of the two organizations, which, with the International Association of Fire Fighters, speak for the nation's paid and volunteer firemen. Since that time, representatives of other associations also have expressed surprise and apprehension at the sudden shift, which can only serve to dilute needed activities in fire defense on the Federal level. The step is a contradiction of wise planning for fire defense, from the days of the Hopley Report.

All the Fire Services ask is that a small but active group continue on as a definite F.C.D.A. entity, pursuing the important work which they have been doing, and that they and their fire defense advisors have ready access to top brass of Federal Civil Defense Administration. This work should include initiation and coordination of research in fire control problems; the furnishing of weapons effect information to the Fire Services; the interpretation of the Fire Services viewpoints and objectives to F.C.D.A. and the stimulation of organization and planning in the Fire Services (such as the session recently held at Olney) in all parts of the country. Such stimulation would help tremendously in energizing all other activities in civil defense.

It would seem that an early and clear-cut statement of intent and objectives of the new Division is in order from F.C.D.A. headquarters. Until that is received, the Fire Services can only conclude that the authorities at Washington now believe that fire defense is becoming relatively unimportant in the over-all picture of national defense.

Fred Shepard

Communication System Makes County Mutual Aid Effective

All Communities in Oneida County, N. Y., Linked With Utica Control Center; Sirens Activated by Remote Control

A STAFF REPORT

Editor's note: This is the story of the mutual aid plan of Oneida County, New York, with emphasis on one factor, and the most important fundamental of that plan: its radio communications system. By "system" we include not alone the material facilities, such as network, control center and so on, but the personnel assets which make the system click.

This is a tribute also to planning and cooperation between men and communities and, more important, between professional paid fire fighters and volunteer firemen, without which efficient county mutual aid cannot function.

The threat of atomic enemy attack and the multiplying complications in the nation's fire suppression problem have spurred organizing for more and better mutual aid. This has in turn focussed attention on improved fire service communications with particular emphasis on short wave radio.

The story of Oneida County is given in detail in the hope that it will assist the fire services of those other counties and areas which presently have this problem under consideration to find the solution to their problem.

The author recognizes the assistance of the following: Chief Leo R. Barry and Chief Dispatcher A. Edward Rothenberg of the Utica, N. Y., Fire Department; Ward A. Bohner, Oneida County Fire Coordinator and member of the County Fire Advisory Board; B. Richter Townsend, Chief, Bureau of Fire, Division of Safety, New York State, and his staff, and lastly, the Utica, N. Y., *Observer-Dispatch.*

RECIPROCAL assistance, or as today's fire service knows it, "mutual aid," is nothing new. From the advent of the fire service itself, there has always existed a willingness of one fire force to go to the aid of its neighbors in time of emergency.

For the most part, however, this was a form of cooperation, without coordination, plan or system. Mere willingness and eagerness could not offset difference in hydrant and hose threads, and lack of communications and other facilities requisite to sound functional mutual aid.

In the late 1920's, attempts were made to reduce mutual aid to a more intelligent systematic basis in a number of states and counties, notably southern Illinois, the Boston suburban area and Westchester County, New York. Aside from the Boston area, which utilized wire telegraph circuits, all mutual aid communications were dependent upon the commercial telephone and/or telegraph or messengers. Until the 1930's, there were no centralized controls, or area headquarters to direct mutual aid operations and which could serve as the heart or nerve centers of all mutual aid communications.

Shortly before World War II the first such County Fire Control Center was established in Westchester County, N. Y., and soon after, similar and improved control headquarters were introduced in suburban Washington and other areas. All of these had one serious weakness, however. That was inability to maintain liaison between the control center and the fire forces in the field, and between all the numerous fire department headquarters in the mutual aid system. At that time such radio as was employed by or available to the fire service was shared by it with police or other services. It remained for the Federal Communications Commission to correct this drawback by making exclusive frequencies available to the fire service.

Oneida County's Mutual Aid Plan was launched about 1940 by the Oneida County Fire Chiefs Association and other interested groups. The first coordinator for the organization was Joseph N. Sullivan, Commissioner of Public Safety for the City of Utica.

It was not until July, 1949, however, that the original seed for such a plan as the county Mutual Aid Association radio network took root. This occurred at a summer quarterly meeting of the Oneida County Fire Chiefs held in Lee Center, N. Y.

Chief Ward Bohner of Waterville, N. Y., who recently was appointed full-time county fire coordinator for the County Mutual Aid and Fire Radio System, as it is known, presented for consideration the recommendation that all fire stations in the county be linked together by a radio network. He suggested that each of the nearly 50 fire stations in the county should install its own transmitter and receiver and, thus equipped, all stations could immediately know about any emergency occurring anywhere in the county and whatever aid was desired.

A committee was appointed by the association to contact radio manufacturers to obtain information and recommendations for such a system. The group reported its optimistic findings in October, and this led in turn to formation of a new committee of county officials to make further investigations.

These men approached the Oneida County Board of Supervisors and, after some discussion, were able to obtain from them an appropriation of $35,000 to purchase a 30-watt 2-way mobile radio for one fire department truck in each town or village in the county that was a member of the Mutual Aid Association.

Fortunately for the program, in addition to sparkplug Ward Bohner the county found another active supporter in Fire Chief Leo R. Barry of Utica, who arranged with Commissioner Sullivan for the installation of the system's dis-

Chief Leo R. Barry, at his desk in Fire Headquarters, Utica, N. Y. Utica is the center of the Oneida County Mutual Aid System.

patching center for the county network in the Utica fire alarm headquarters. This helped the volunteers surmount one of their most difficult hurdles—that of locating a suitable round-the-clock control center. These facilities are situated on the third floor of the Utica headquarters where they are administered by the Utica Fire Department's regular fire alarm personnel.

Into the Oneida County Mutual Aid Plan at the present time are integrated Oneida County's 45 fire departments (the Portner Fire Company at Lee is not a party to the program because it has no assigned fire district, and consequently lacks fire underwriter's recognition, and the Lairdsville unit is a second company of the Westmoreland Fire Department. These communities (exclusive of the cities of Rome and Utica, which are both in the plan) range in population from 500 to 5,000 persons, the average population for each fire district being about 2,000.

Because mutual aid cannot be too rigidly restricted to political sub-division boundaries, and fire knows no county or state lines, some six out-of-county fire departments have been taken into the system as full partners. These are Old Forge, Poland and West Einfield, closer geographically to Oneida County's population centers than those of Herkimer County, of which they are a part; Unadilla Forks which is rather remote from other Otsego County communities; West Leyden, a Lewis County community, which also looks to Oneida County for its trading and social life; and Williamstown, an Oswego County village that works closely with Camden.

But the system is more far reaching than this. Through agreements reached under the State Mutual Aid disaster program, Oneida County can call on any one of its immediate neighbors for help—Herkimer, Lewis, Madison, Otsego and Oswego, and they, in turn, can seek and receive help from Oneida County. Through the State Division of Safety, Bureau of Fire, help from other counties—in theory, from any other county or municipality in the state—will be forthcoming if necessary. It should be mentioned that most of these other counties either have two-way radio networks, or are installing them.

Radio equipment has been extended in recent months to every fire department in the county. Each department is entitled to one mobile two-way set. The departments themselves pay for additional mobile equipment, station receivers and "Quick Call" equipment, of which more later. All of the participating out-of-county departments, except West Leyden and Williamstown, have bought radio equipment. Fourteen departments have functioning "Quick-Call" and installations are presently being made in 20 others. In addition, Utica will soon install 14 sets within its own department. (Utica has 21 pieces of apparatus radio-equipped and Rome has 7.)

Viewed from the financial standpoint, Oneida County's total investment, not including maintenance, has been $60,101. The Utica Fire Department and other departments which have purchased additional equipment, have spent a total of $28,400, some of which is reimbursable under the matching funds program of the Federal Civil Defense Administration.

The mutual aid annual budget for 1954 is $19,940 of which more than half goes for the salaries of Coordinator Bohner and Robert Mote, the full-time County Radio Supervisor, who is responsible for maintenance of the system.

The Mechanics of the System

The electronics of fire service communications are usually a puzzle to most firefighters but in nearly every volunteer organization there are radio enthusiasts and "hams" willing and eager to lend a hand. In Oneida County, after getting the possible local advice on the engineering problems involved in installing a fire service network, the engineering data were checked with the manufacturer selected for the installation. The company made complete and detailed studies of the hilly county area, and concluded the best method to blanket it "communcationwise" was by placing the base antenna on the Utica fire station roof and erecting three repeater stations at recommended points. One therefore was installed at Paris Hill near the southern end of the county, the second near Glenmore in the northwestern corner of Oneida County, and the third on Starr Hill in the northeastern section.

The location of each repeater station, besides the requirement of being installed at a high geographical point in the county, was chosen after considering accessibility in both good and bad weather, availability of land, and nearness of an outside power source. The use of the Starr Hill site was given to the county for the repeater station by New York State and the other two sites donated by private persons.

System Design

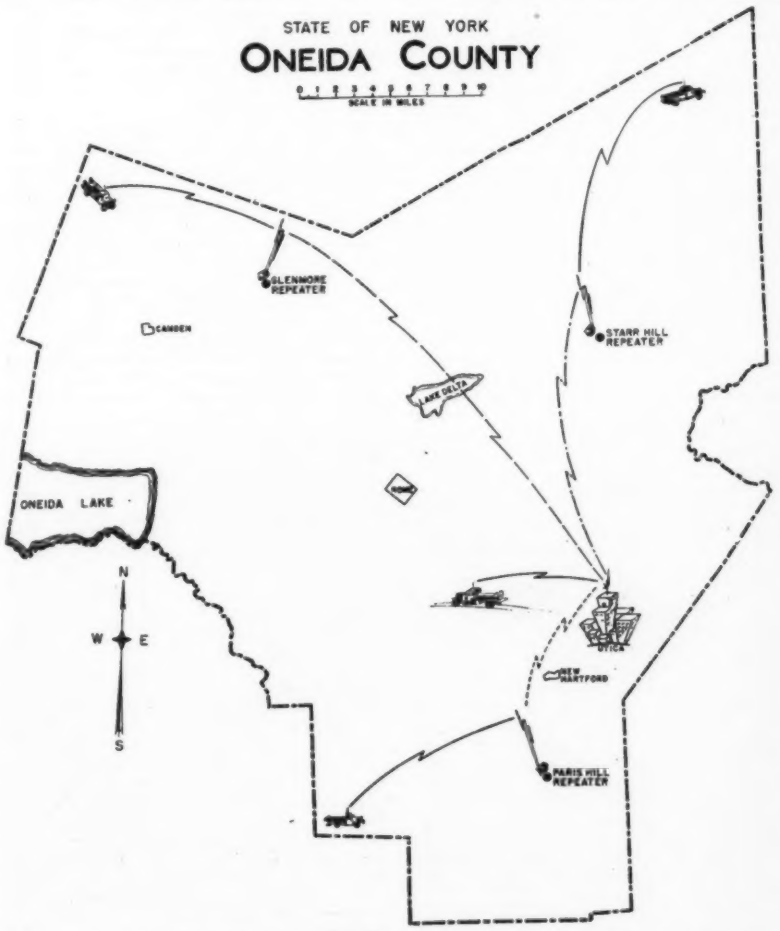
The system was designed so that:

1. All operators of 2-way radios in the network located near the Utica base station can communicate directly with the Utica dispatcher without the signals being relayed by one of the repeater stations.

2. Any of the system's mobile 2-way radios beyond direct range of the Utica station can be used to talk to the Utica dispatcher as a result of signals being relayed by the nearest repeater station.

3. Any operator of one of the network mobile stations can talk to any other operator in the county as a result of the signals being relayed by one, or simultaneously by all three repeater stations.

Each repeater covers a large portion of the county by itself. But because of the geographical terrain of the county it was necessary to have three repeater stations to cover the entire county. While the three repeater stations are used simultaneously under some conditions, the radio manufacturer's engineers designed a method to de-activate



This map shows how the whole county is blanketed by the Oneida County Mutual Aid two-way radio system.

Robert Mote, radio engineer for the Oneida County system, writes down a message while Chief Dispatcher A. Edward Rothenberg answers over the remote control microphone.

The Quik-Call button box on the dispatcher's desk in the Utica Fire Station control office makes it possible to remotely activate sirens at individual fire stations.

two of the repeaters farthest from the mobile unit that is transmitting, thus allowing the one communications repeater to operate alone. For example, if a Camden fire truck is nearest the Glenmore repeater station and has a radio message the Utica dispatcher can deactivate the Paris Hill and Starr Hill repeaters by using a remote control system of the "Quik-Call" line switching equipment to permit only the operation of the Glenmore repeater.

The base station (Utica) transmitter-receiver, is located only a few feet from the dispatcher's desk and remote control console. Because this equipment is supplied primary power from an outside source, a complete gasoline-driven stand-by power supply has been built and installed ready at all times to furnish power in case of normal power failure.

Repeater stations, including radio equipment, antenna supports, and houses were installed as part of the manufacturer's complete "package system." Each repeater transmitter-receiver station is housed in a small cement floored building with gasoline-driven stand-by power supply. When power to a repeater station fails, the emergency supply takes over as a result of action of an automatic change-over unit. Loss of power from one repeater supplier has no effect on other repeater stations.

The "Quik-Call" System

"Quik-Call" is a Motorola trade name for its system used in this radio network. Actually two systems are employed, one for repeater control and one for blowing sirens at specified remote fire stations.

Three 2-position non-holding switches on the panel of the remote control console in Utica central office permit selective control operations of the repeater stations. Each switch corresponds to one repeater. When the dispatcher pushes one of the switches up, an electrical pulse containing two tones is superimposed on the transmitter carrier.

Although all three repeaters receive the pulse, only two are electronically designed to automatically de-activate as a result of the specific combination of "Quik-Call" tones being received. The third repeater station transmitter is unaffected by the combination of tones transmitted from the Utica station, and continues operating.

By pushing the same control panel key down, which transmits on the carrier frequency two different tones, the de-activated repeater transmitters are returned to operation.

Alongside of the control console at the base station is a push-button box which is the control facility for the second "Quik-Call" system of the Oneida County network. By pressing four buttons on this box, two pulses, one of approximately .75 of a second time duration and one of .50 of a second time duration, each containing two tones, are transmitted. Each "Quik-Call"-equipped fire station has corresponding electronic equipment that reacts to a specific combination of tones, which when received, activate the remote fire station siren. By using two pulses, each carrying two tones, false calls are eliminated.

Many of the fire departments in the county system are volunteer units too small to keep one or more persons on hand continuously at the fire station. It is the general custom for someone who works near the engine house to have the keys to the building. When the siren is set off by "Quik-Call," all volunteers report immediately to man the apparatus. The first to arrive radios to Utica that his department is ready for service. Utica then broadcasts whatever information is available about the fire. This procedure is particularly essential for efficient mutual aid operations.

If the fire is in a community within the Utica telephone exchange, the person calling for fire equipment can call the Utica dispatching center directly and the dispatcher will activate the community's siren by "Quik-Call." Should the fire occur outside the limits of the Utica telephone exchange, the person reporting the fire telephones a predetermined number to have the siren set off.

Should the volunteer company need assistance in fighting the fire, it reports its requirements to Utica over its 2-way radio. By quickly referring to the comprehensive mutual aid chart at headquarters, the dispatcher can immediately activate the sirens in other villages near the fire where the volunteers are needed.

When all installations are completed in the county there will be a total of 105 mobile units, 4 portable hand-carried transmitter-receivers, and 59 station houses equipped with receivers connected to alarm systems and actuated by selective calling. They may be actuated individually or simultaneously in one group call.

Whenever any individual station receiver is actuated by selective calling, the dispatcher at Utica headquarters immediately starts a recheck by telephone. This of course is much slower but it is the only means headquarters has of knowing that the call was received at the other end.

Such a system eliminates the commonplace method of calling up neighboring fire forces by telephone and requiring them to stand-by for possible aid. It makes it possible to alert additional volunteers only when there is no doubt but that they are required, and yet allows them to be available when needed as rapidly as under the stand-by system. Obviously under this method volunteers lose less time from their work and less loss of sleep if the fire occurs at night.

Wherever the fire apparatus is located at their individual stations, on the road or fighting the fire—the operators can at any time communicate with the Utica control office or any or all other radio-equipped mobile units in the system. As a result of this facility for instantaneous comunications with nearly all other fire fighting equipment in the county, doctors, ambulances, additional fire forces and other necessary aid can be obtained quickly from even the remotest parts of the county. A call can be sent out to a number of fire departments near the point where the doctor or other aid is located, and the message quickly relayed from there by either personal contact or by a call over whatever wire communication facilities are available.

The system is so designed that if a mobile unit is transmitting and the Utica dispatcher wants to use the circuit for an emergency message, a precedence circuit, engineered into the system, permits the Utica station to take control.

The first large scale test of the system occurred on November 25, 1950, when snow and gales struck Oneida

County with ferocity unequalled in recent years. Sleet and high winds broke telephone and power lines. Wire communications were virtually non-existent. At many points no means of message flow existed except over the county-wide radio network. It offered county officials undeniable proof of the immense potential and actual value of the Oneida County Mutual Aid Association F. M. 2-way radio system.

Since that time the county fire fighters have had occasion to prove the system's value in both large scale fires and civil defense exercises.

Here is a more detailed explanation of the way the system works:

An operator in the Utica Central Fire Station alarm office receives a telephone notification of a fire in a neighboring community. He presses a button. At virtually the same moment a siren on top of the volunteer fire department's station in Boonville, which is the nearest community, begins to wail. The volunteers in all walks suddenly lose their business identities and become firemen. They make for the fire house at top speed and are greeted by a flat metallic voice of a public-address unit:

"Boonville, you have a fire at Hawkinsville, in the village . . . Boonville, you have a fire at Hawkinsville, in the village . . . Boonville, you have a fire at Hawkinsville, in the village . . ."

That 10-word message is repeated and repeated by radio speaker on the engine house wall. Soon the engine is en route to the fire and a member of its crew is acknowledging the call by radio. The Utica dispatcher stops repeating the message. Boonville is on its way. The Oneida County network scores again in its race with time.

Utica Department Dispatches Alarms

The mutual aid dispatcher, who is one of the regular Utica fire alarm staff paid by the City of Utica and for the moment doubling in brass, in pressing the button touched off an electrical impulse exactly as one does when the electric front door button is pushed. The siren in Boonville can be likened to the chimes which sound when the front door button is pressed, except that no wires link the mutual aid button and the siren. It is all done by radio.

The electrical impulse touched off when the button on the "Quik-Call" at fire control was moved was translated by special equipment into a pattern of radio signals. Special receiving apparatus in Boonville, attuned to that pattern but none other, picked up the combination of signals. Reversing the process of the Utica transmitter, the Boonville receiver converted the radio waves back into an electrical impulse. This tripped a siren mechanism and an alarm was sounded. The dispatcher, using voice radio this time, constantly announced the location of the fire to volunteers arriving at the fire house. If he desired to vary the message and give special instructions to the volunteers, he could do so.

Personnel and Maintenance

A. Edward Rothenberg is chief dispatcher for the County, by appointment of the County Board of Supervisors. He is also chief operator for the city of Utica. Because of the size and complexity of the system, a full-time County radio supervisor, Robert Mote, is employed to maintain the equipment. He has designed and constructed a complete radio repair shop and laboratory in a room near the main dispatching center in the Utica fire station, and equipped it with the necessary shop facilities to maintain the system.

In order to prevent radio equipment interruptions or breakdowns, Mote makes a monthly visit to each of the 45 mobile units in order to run tests of the sets. Preventive maintenance is highly essential in the efficient operation of any county radio network such as this. Among the equipment Mote has designed is a complete standby transmitter-receiver unit and power supply to function as a base station, should the primary equipment at any time be out of operation for maintenance. This replacement set is constructed of a Motorola 30-watt mobile unit that operates on the same frequencies as all the other mobile units in the system. The set is mounted above an a.c.-d.c. converter and installed in a steel housing built on casters so that it can be rolled any place it is needed.

Sponsors Say System Has Proved Self

Chief Leo Barry of Utica and County Fire Coordinator Ward Bohner both express gratification at the way the Oneida County radio installation has turned out. Chief Barry writes: "After using radio in the fire service for several years and observing the increased efficiency that it has brought about—in that every request is only at arm's length away and pressing a transmitter button brings immediate response to all your needs, I firmly believe that radio communication in the fire service is the greatest improvement in efficiency in that service since the change to motorized apparatus."

Coordinator Bohner comments: "To me it (the System) has been and is the one thing which unites all the departments in our Mutual Aid Plan together. We are deeply indebted to the city of Utica, the Utica Fire Department, its Chief, Leo R. Barry, the Chief Dispatcher, A. Edward Rothenberg, and his dispatchers for their cooperation; their help and effort has made possible the efficiency which shows in the successful way in which the system operates. Even with our radio communications, we must have good dispatching with men trained for the job. And that we do have."

New Apparatus for Charlotte, N. C.

Bids for three new fire trucks for the Charlotte, N. C., Fire Department were opened at Charlotte City Hall Feb. 9.

Charlotte's fire department, considered one of the best in the Carolinas, will, with the newly acquired equipment, be one of the best in the Southeast.

Although business is always hot in Charlotte, and the queen city of the Carolinas has always a warm welcome written on the door mat, it is always preparing for a "hot time" a little way ahead.

D. G. SPENCER

The Paris Hill repeater house showing the radio equipment installed inside.

Members of the Oriskany Falls Volunteer Fire Department, one of the 50-odd departments represented in the Oneida County radio communications system, respond to a fire.

Fire Service Ventilation in Principle and Practice

Part IV—Top or Vertical, Ventilation

By ROI B. WOOLLEY
Assistant Editor

Editor's note: Chapter I of this series on Ventilation (November, 1953), reviewed the fundamentals, purposes, requirements and limitations of modern ventilation. Chapter II (December, 1953, issue) took up the technical questions of the principles of combustion and behavior of fire with relation to removal of smoke, heat and gases from a building. It also discussed explosions and backdrafts.

Chapter III went at some length into the hazards of too hasty, ill-ordered and poorly executed ventilation.

With these basic preliminaries in mind, it is appropriate to study and discuss in greater detail the application of some of the principles and practices only touched upon in previous installments.

In so doing, it should be remembered that ventilation is among the most important of the fire fighter's tasks, and one for which no universal operational procedures can be laid down. Just as fires differ according to buildings, occupancies, weather and other imponderables, so ventilation of fires may be expected to vary according to the conditions encountered in each individual incident.

Ventilation can be the simple matter of opening a window or louvre, or removal of a large part of a roof, or a sidewalk. But in every instance, its effects can be far reaching for good, or for evil, as the operations are related to the respective fires in question. This essential premise should ever be kept in mind by the fire fighter.

The following Chapter attempts to cover top, or roof, ventilation, which normally is that most widely employed in opening up buildings to release and remove the products of combustion, such as smoke, heat and fumes, which slow attack on the fire and make rescue difficult.

It is hardly necessary to remind the reader that it is impossible to encompass in a single chapter all of the many applications of this type of ventilation which the fire fighter will, or may, encounter. Top ventilation may create entirely different problems for the small town and rural fire department with limited equipment, than it does for the fully equipped big city fire force. But that is no reason why each should not be forearmed with as broad a knowledge of venting all types of occupancies as possible, because in these days of mutual aid no fire officer can tell when or where or upon what fire he may be called upon to operate.

In this chapter the author discusses ventilation as it relates to the several more common types of occupancies in which the majority of fires occur, and which are most liable to be encountered by the great majority of fire fighters.

In this, as in other installments of this series, the author has borrowed freely of the experience and knowledge of leading fire protection engineers. Proper credit for their assistance will be included in a final installment.

FOR the purposes of this study we may say there are two general types of ventilation of buildings involved in fire: vertical, or top ventilation, and lateral, or side ventilation. In other words, ventilating a burning building follows one or the other of these patterns. In some cases both types may be employed. We are concerned in this chapter with the overhead and vertical ventilation.

Before attempting to analyze the factors that should indicate which of these methods of ventilation is advisable for certain kinds of fires, and where ventilation can best be applied, it might be well to briefly review the advantages of and reasons for top, or overhead, ventilation.

Roof of huge former New York brewery building has been vented, showing flames and smoke being released and fire fighters using streams to "cover" openings. Note firemen standing by parapet at roof edge—the safest position in roof operations. Distributors and cellar pipes were used at this smoky 4-alarm blaze.

In Part II of this series we discussed the behavior of heat and attempted to answer the question: why do flames, hot gases and smoke rise? For as is known by every fire fighter, heated air, whether mixed with burned or unburned products of combustion or not, has a tendency to rise.

When air, or any other gas, is heated, there is an increase in either its volume, or its pressure, or both. If the heated air or gas is not confined, the volume is increased; conversely, if it is confined, the pressure is increased. This, too, is generally common knowledge.

For each temperature rise of 459 degrees Fahrenheit, the volume is doubled, or if the air or gas is confined, the pressure is doubled. Therefore, in an enclosed building in which a fire is burning, the heat, smoke and gases, being light, rise through any available passage, such as stairwells and elevator shafts, until they meet an overhead obstruction.

Then, if they find an opening, no matter how small, they again travel vertically until they reach the highest point under the roof. If unable to find an opening to the outside atmosphere, and with the pressure continuously building up, they spread out in all directions across the underside of the roof, or other overhead obstacle, then bank down and extend laterally across the ceilings at each floor level, and force their way through whatever openings they encounter, such as loose doors, open transoms, and into every space and crevice.

This action, in the vernacular of the fire service is known as "mushrooming," and it is one of the most frequent causes of fire spread through a building. Usually, the fewer the openings, the greater will the pressure build up.

This frequently combustible accumulation of gases, even though heated

above its ignition temperature, may not burn for lack of oxygen. When confined within a building, it is comparable to a furnace with all doors closed and damper shut. To ventilate at a lower story before providing top ventilation would be similar to opening the damper of the furnace. Additional oxygen is supplied with a corresponding increase in the intensity of the fire, which may well turn the building into a raging inferno with flames involving all floors. Moreover, if sufficient oxygen is admitted from a lower floor *before* top ventilation is provided, there is always the possibility of instantaneous combustion of all the pent up and heated gaseous mixture, which is commonly referred to as a smoke explosion, or backdraft.

The buoyancy of smoke and gases, that is, their tendency to rise, may be affected by many things, but chiefly their degree of heat. Water has a great cooling value, and when a stream of water, or better still, a fine spray or fog, is played on a fire, it tends to reduce the temperature of the gases and thus prevent them from rising as rapidly. Water has another and very beneficial effect in that it tends to wash out or filter out some of the unburned carbon (smoke) and absorb some of the harmful gases.

The object of all ventilation is to provide an adequate path or channel for the escape of these charged, contaminated atmospheres and their replacement by fresh air, with this important proviso: the exchange should be accomplished, if possible, without ignition of explosive mixtures, and with least possible damage to building and occupancy.

Although there are factors which might mitigate otherwise, the safest and most effective method of accomplishing these results is by means of top ventilation, or at least to begin venting at the top levels. Long experience has proved that the most effective method of removing heated air and gases and smoke calls for an opening or openings in the upper parts of the building, usually over the fire, through which the smoke and combustible can escape to the outer air.

The opening need not necessarily be a skylight directly over a vertical artery, or a bulkhead door or scuttle, so long as it is at top level where smoke and gases will have least impedance in their escape. Straight-away overhead openings, however, are naturally the most direct channels for rapid, safe ventilation of lower, charged areas. And the fewer the obstructions to air travel, the more rapid and effective the ventilation process.

Obviously, successful top ventilation will best be effected where there are vertical, unobstructed arteries in the building, or channels which can easily be created for such venting. Top, ventilation is difficult, if not impossible, in more modern types of structures having no unobstructed vertical arteries, and where stairwells and shafts are cut off from the roof without overhead openings or coverings. If, in such buildings, these channels and overhead openings cannot be created, lateral ventilation may be the only answer.

One objective should be borne in mind: for fires where the interiors are charged with heavy concentrations of heated smoke and gases, it is important that the ventilation, if attempted, be carried out in such a way that other passageways or openings, especially transverse openings, will not draw the fire *horizontally* through the different floors.

Laddermen have opened roof to vent smoky fire and are completing operation by pushing down ceiling of top floor under cockloft, with plaster hook. Note fireman in smoke at left using claw tool, also nails projecting up from cut wood sheathing; where possible these cuttings should be turned nail points down.

At many fires of limited extent, ventilation for the removal of smoke and gases involves only the opening of windows on the leeward and then on the windward side of the floor on which the fire has taken hold, or by removing skylights or other openings over vertical shafts where the fire is located close to such a vertical artery. Where the fire is on the top floor or attic, obviously, roof ventilation is indicated.

Summing up: overhead or top ventilation is generally advisable where the condition of the fire, and its components of heat, smoke and gases are such that mushrooming and backdraft are possibilities and where the building construction is such as to make possible the unobstructed vertical release of the heat, smoke and gases.

The ventilating instructions followed by most municipal fire departments, to ventilate a building at the top and work downward, are probably best under the conditions given, *but it should be remembered that this procedure does not insure freedom from explosion, or backdraft,* as has been proven in many fires. Many fires, particularly at night (when accurate size-up is difficult) gain great headway, and build up large pressure-charged areas before discovery. Any opening anywhere in the structure may provide the essential ingredient, oxygen, for the swift combustion of these charged contents. Nevertheless, most students of the subject consider the risk of explosion much less when top ventilation is done, than where ventilation is attempted at levels below the fire.

A point is made by one authority which appears to run somewhat counter to the theory of opening up directly over vertical arteries.* He says that the gases in the portion of the building farthest away from the fire are less liable to be at the temperature at which ignition will take place when sufficient air is available, and therefore ventilation which allows escape of these cooler gases is less liable to result in an explosion. Yet, as has been pointed out in an earlier Chapter, serious explosions have resulted when openings were made somewhat removed from the actual fire area in involved buildings, and, in some instances, at the uppermost part of the fire building.

Another factor which has a direct bearing upon overhead ventilation, and must be considered, is the possibility of setting up such a draft that the smoke and heat are driven back onto the fire fighters who may be operating below. Although this danger is rather remote where ventilation is started above the point of attack, nevertheless there is always a possibility that a sudden change in the wind, or sudden thermal change within the building possibly due to an unexpected opening at some other point, may create a "down draft."

The dangers of a backdraft due to an explosion, or of an outward rush of heated gases when an opening is made into the charged building, or of a reversal of smoke discharge brought about by a shift in the wind conditions, are very real, especially where there are indications that the fire has been burning for some time.

A smoke-filled building does not necessarily mean there is this danger of explosion; the fire may be of recent origin, in which case the smoke will have given up most of its heat to the walls, furniture and contents of the building, thus removing much of its dangerous character. Furthermore, the concentration of unburned gases will be low. In this type of fire it is often possible, through the use of respiratory protective apparatus to get to the seat of the fire without recourse to ventilation; and where ventilation appears desirable, the opening of windows and doors on the floor in which the fire is burning, and probably on the floor above, will tend to reduce the smoke condition to a point where final extinguishment of the fire can be accomplished. At some of these fires, other ventilation, particularly that within the upper part of the structure, might tend to carry the smoke and heat, and possibly the flame, to the upper floors where if the fire does not do damage, there may be extensive injury from smoke.

Lest this appear contradictory to the

*A. C. Hutson, former assistant chief engineer, National Board of Fire Underwriters, speaking before the Fire Chiefs Emergency Plan, Jan. 15, 1936.

foregoing statements on top ventilation, we reiterate, that the determination whether to open up at the top level must be based upon a number of factors and that there are imponderables and controlling circumstances at every fire of any magnitude which can cause the best theory and practice to fail.

Let us review these factors which influence top level and overhead ventilation.

The Building Involved

A thorough knowledge of building construction is a great asset in order to know at what point in different types of structures ventilation can be most easily, effectively and safely carried out. As we have said, the proper course to follow varies with circumstances and it is only by experience and training that an officer can decide on the appropriate line of action.

The broader the knowledge of building design and construction in general, and of the particular structure involved in the fire in particular, the more successful will be the ventilation operation and the extinguishment of the fire. This is particularly true in determining whether or not top, or upper level, ventilation is to be applied.

Advantage must be taken of any special constructional feature which assists ventilation, such as staircases, shafts, dumbwaiters, ducts, roof openings and the like. Knowledge of outside and inside fire escapes and the quickest means of reaching the roof or upper levels of the involved building is also beneficial.

Knowing the construction of structures involved by fire, and of their contents, may prevent much misapplied and wasted effort in opening up, and consequent delay in getting at the fire, or making rescue. This applies with particular force to buildings that have been altered or sub-divided into cubicles, or where false fronts and ceilings have been added which cut off or reduce avenues of possible air travel. Such knowledge of construction may forewarn an officer on the possibility of explosion hazards and most important, of possible danger to crews engaged in the ventilating operations.

Knowing the materials that enter into a building and, as we shall see later, its occupancy, a fire officer can get a much better understanding of the nature of the smoke in evidence, and of its possibilities for damage and destruction.

Thus, for example, knowledge that the building has been subdivided and partitioned by combustible fibreboard should tip off the officer who will direct ventilation of the possibility of rapid spread of the fire; of possible dangerous toxic gases in the smoke, and of the tools and equipment that can best be applied for opening up.

Knowledge of the location of certain details which have to do with the building, such as the heating and ventilating system, the gas meter, and gas and electrical shut-offs, chimney openings, kitchen vents, etc., would be a further distinct asset to those engaged in ventilating during a fire.

The extent to which the fire building is connected with, or tied into adjoining structures, and knowledge of all connecting openings and unstopped connecting areas, have a bearing on where and how ventilation should be undertaken. Concealed and unsuspected openings have not only permitted smoke to extend into adjoining structures with damaging results, but have foiled the extinguishing efforts of fire fighters by rendering ineffective their ventilation strategy. If opening up at top level will result in extension of fire into areas unsuspected and unknown by firemen such overhead ventilation should not be attempted. A thorough understanding of the building involved is the best insurance against such an error.

Of particular help is a pre-knowledge of any ventilating and/or air-conditioning systems in the fire building. Such systems can be either a serious hindrance to ventilating the structure, and a means of extending the fire, or they can sometimes be put to good use in ridding the premises of smoke and heat.

Frequently, top level ventilation calls for cutting a roof. A knowledge of the building's roof construction, the materials, and how it is supported, may save considerable time in opening up, and even prevent injury to firemen. In one city fire crews wasted many precious minutes attempting to open a roof only to find that under the wood and composition sheathing there was eight inches of solid concrete.

This same thing has happened in the effort to open up floors to ventilate basement fires. In one city a small but smoky fire in a storeroom located off a basement, under the building's sidewalk, knocked out almost an entire first alarm assignment before it was determined that the best way to ventilate the fire area would be to cut through the sidewalk and part of the street. Company inspectors had never informed their units of this particular hazard. Had they done so, literally hours might have been saved in getting at, and extinguishing, this fire.

Knowledge of construction and natural and possible avenues of escape for smoke, heat and gases is particularly essential in such structural occupancies as hospitals, hotels, theatres and places of public assembly, warehouses, and in certain industrial occupancies. Top, or overhead, ventilation may mark the difference between life and death at a fire.

Firemen open up roof of this big Pittsburgh furniture storehouse to relieve smoke and gases as streams cover openings. The more quickly such roofs can be opened, the sooner the fire can be reached and killed and lines shut down—reducing water loss.

Fire like this, involving roof and cockloft areas of a Los Angeles apartment house, are difficult to vent, and most fire operations must be directed from below, with firemen using fire escapes, interior stairwells and extension ladders. Here top-floor windows were opened below fire to assist men inside, attacking fire through ceilings.

It may be the one best method at one fire and one type of building, and the worst possible thing in another. An error, based upon misinformation, in attempting to ventilate a manufacturing plant resulted in an explosion that killed and injured several firemen. A like mistake in opening up a grain elevator caused a fatal explosion. Advance knowledge of these structures, and contents, might have prevented these and other similar unfortunate episodes.

Some authorities contend there is little need of ventilating the upper stories of modern buildings constructed in accordance with an up-to-date fire code, if the fire is on a lower floor. Such a building, they point out, has each floor cut off from the one above and below, and the opening up of the roof or windows on the upper floors will do little towards drawing the smoke or heated gases out of the floor involved. Likewise, they add, it is of little value and may involve harm to the elevator machinery or to expensive marble trim in stairways to remove skylights or other openings over elevator and stair shafts where these are built in accordance with building code requirements which call for total enclosure and the protection of all openings with suitable fire doors. Another factor to be considered, they also believe, is that openings must be large to permit good ventilation; a small opening will only set up a draft condition without adequately relieving the smoke.

Other students contend that it is as essential to ventilate some fires in these more modern buildings at the top as it is fires in more combustible structures. Fires on the upper floors, if it is possible to ventilate above them, may be held to the floors on which they originate. Here again, no set rule can be advanced that will apply to opening up all types of buildings. The one positive recommendation that can be made is that *the more extensive knowledge of building construction in general and of the structures in his district a fire fighter possesses, the more efficient will be the ventilation operation.*

Occupancy and Contents

Much of what was said in the foregoing applies equally well to the contents of the building involved in the fire. The more familiar the fire fighter is with the furnishings, stocks and storages in a structure, the easier and quicker it is to plan and execute ventilating.

In an earlier Chapter we told how contents of a building may be anticipated from evidence produced by the building's location, advertising signs, show windows, character of smoke emitted, and information gathered from employees and other sources, assuming of course that the fire company crews have not been advised by their inspectors, or fellow firemen.

Information that has a direct bearing on venting any structure and upon the force doing the venting, includes:

1. The amount and nature of the contents: type and kind of combustibles;
2. The location of these combustibles in the structure with particular reference to chemicals, flammable liquids, their accessibility and relation to possible or actual channels for ventilation.
3. The smoke, heat and explosion hazards in the products themselves and in their method of storage.
4. The built-in fire detection and extinguishing systems in the occupancy.
5. Layout of the interior, passageways, shaftways, stairways, and other vertical arteries, their accessibility as avenues for transfer of contaminated atmospheres to the exterior air. The availability of, and approaches to, windows, bulkheads, fire escapes, etc.
6. Last but not least, the life hazard, i. e.: employees and other occupants of the premises, who must be considered in ventilating the premises in order to perform rescue and/or extinguishing operations.

Fire Detection and Extinguishing Systems

Although not directly concerned with the problems of ventilation, detection and extinguishing systems do have a bearing upon our subject.

The more quickly a fire is detected in its infancy, and notice of its discovery transmitted to the fire department, the less need for any extensive ventilation and operations, the less destruction to the premises, and less punishment fire fighters will be called on to endure.

Modern fire detection systems can be installed anywhere to "pick up" a fire either by its flame, its smoke, its temperature, or by rate-of-heat-rise, and notify the fire department direct or through a supervising agency.

As for sprinklers, their early employment helps cool down the heated gases, lower the smoke and fume content of the atmosphere, and make it possible for firemen to advance to ventilate and complete the fire extinguishing process.

Location of the Fire

Ventilation, whether vertical or lateral, should not be attempted (except possibly where immediate opening up will save life) until the location of the fire is fairly well determined.

Smoke emitting from the top floor or cornice does not necessarily indicate a top floor fire. The heart of the blaze may be, and frequently is, in the basement. Too precipitate opening up before the fire is located may speed its extension throughout the entire building, and even beyond.

Location of the fire may be indicated by heat conditions, heat and density of smoke, and sometimes by its travel and the pressure behind it.

Fire may have traveled some distance from its source by the time fire forces arrive. Consideration must be given the extension of the fire as well as the effort to locate its heart. The fire's extension may seriously jeopardize top or overhead ventilation operations. Obviously, extensive roof venting may be impractical, if not extremely dangerous, where fire has seriously involved the top floor or cockloft.

Location is expedited by accurate, fast size-up, by knowledge of the building involved, and its contents.

Extent of the Fire

A number of authorities divide fires into four classifications, or a fire into four stages, as follows:

1. The first stage: the free-burning fire where adequate oxygen is still available in the air, and water vapor and carbon dioxide are being produced along with small quantities of carbon monoxide and sulphur dioxide.
2. The second stage: the original oxygen proportion of 21 per cent in the air has been reduced to about 17 per cent. Burning has slowed and carbon monoxide production has increased. At this stage room temperature is around 300 deg. F.
3. In the third stage, fire is barely visible because oxygen has been reduced to 15 or 17 per cent. Carbon monoxide is produced in increasing amounts, and free carbon and unburned fuel (in the form of tar and other particles) form dense smoke. Intense heat and gases present constitute an explosion hazard to personnel.
4. In the fourth or final stage, the fire

Roof openings and light shafts discharge smoke and flames to pose threat to adjoining six-story multiple occupancy at this Bangor Hotel fire. Note concentration of fire in center of building and absence of smoke on windward street sides. Here air currents are tending to carry fire to rear and center sections of building.

is smoldering with the oxygen content below 15 per cent (approximately 13 per cent). The area is completely filled with smoke and gases at a temperature exceeding 1,000 deg. F. This intense heat distills some fuels from the combustible materials of the occupancy; the fuel gases mix with other gases present, adding to the fire hazard. Here the danger to personnel and the probability of explosion are extreme.

Careful evaluation of the extent and severity of the fire is as essential as knowledge of its location, before any openings are made in ventilating. The severity and extent usually depend upon the kind of fuel (stocks and furnishings, etc.); the presence of free oxygen (openings in the structure); the lack of automatic extinguishing devices, and unimpeded avenues of travel for the fire. Most or all of these factors have a bearing on ventilation.

The stage to which the fire has progressed and is threatening should be an influencing factor in determining the ventilation strategy. Unless there is a life hazard, it is better to delay initial ventilation until the extent and location of the fire are fairly well determined and until forces are available to carry forward ventilation, coordinated with attack operations.

Urgent for Action

It will be noted that we have repeatedly referred to life hazard, both as to occupants of involved buildings, and to fire force personnel.

Most fatalities from fire are due to suffocation, rather than actual burns, and even where there is burning, the victims usually are dead from superheated gases and smoke before flame touched them. All of which attests the need of rapid venting so as to remove or lessen the effects of superheated atmospheres and toxic fumes.

Search and rescue go hand-in-hand with ventilation. Here again, knowledge of the involved building and its contents is essential in determining life hazards, both from fire and smoke, and which may result from improper ventilation.

Usually the longer a fire is permitted to smolder and build up heat and pressure, the more dangerous it is. Ventilation, therefore, whether at top or other locations, should be started as quickly as possible, particularly where lives are at stake. Any errors made in the haste to draw the hazardous smoke, heat and gases away from possible victims, or to effect rescue before attempting full scale ventilation, are justifiable in the eyes of most experienced fire officers. However, if it is necessary to risk the fate of a few persons in order to safeguard the lives of many by adopting drastic ventilation methods, this decision must be made. This is one of the critical needs of fast but thorough size-up.

Any way one views ventilation at fires, *time is of the essence!*

Weather Conditions

The two most important weather factors which influence ventilation—whether at top level or other points, are wind and humidity. Wind plays a greater part in lateral or horizontal venting than in the top or overhead operations. However, as we have said, air currents may entirely disrupt the plan of ventilation by creating downdrafts, or reversing the travel of smoke, heat and gases to turn them back upon fire fighting crews.

In any overhead, or top level, ventilation the direction of the wind and its force should be considered before opening up. These conditions should be related to possible exposure hazards which might be jeopardized by fire which might follow the escape of hot gases out of the shaft or other arterial opening, and where covering lines either are not available or the fire is too much for them.

Wind sometimes also influences roof ventilation by complicating the opening up operations, such as when high wind is combined with sub-freezing weather, making footing insecure. On the other hand, some wind may assist the fire fighters in cutting roofs by carrying smoke heat and fumes away from them.

High humidity impedes ventilation at every point and level. Under certain climatic conditions, and when smoke is only warm and not very hot (with little buoyancy), there may be little chance to ventilate. Unfortunately, the conditions which produce smoke deficient in heat, and therefore lacking in buoyancy, are also the conditions where ventilation is needed most. This applies with particular forces to below-street-level fires. But even top ventilation may be hindered by high humidity and no wind. Under such conditions smoke hangs low over the roof and upper areas of the structure to be vented; visibility is reduced, making movements dangerous. The smoke, gases and fumes, cooling upon contact with the outer air, fail to continue to rise and pass away from the vents; and they tend to blanket the area. Efforts to open up top floors and cockloft, under these conditions, also may be completely frustrated, even where respiratory equipment is used, because of lack of visibility and other physical danger to personnel. Furthermore, such unfavorable weather conditions increase smoke damages to property and materially delay locating the fire and getting to work on it.

Time of Day

Obviously, night fires are more difficult to ventilate than those in the daytime. During the day visibility is better; size-up can be more quickly made and the ventilating strategy more quickly planned. Best of all, there is less liability of occupants of the involved structure being abed and asleep during the daylight hours (if a building used for human habitation), therefore less immediate need for search for trapped persons and their rescue. This means, in turn, more of the fire crews can be detailed to opening up. This, of course, is no excuse for not checking on the possibility that occupants may be trapped, particularly on the upper floors of tenements and other buildings of multiple occupancy, and for keeping an eye out for possible victims when carrying out ventilating operations.

Night operations complicate top level ventilation by making it more difficult and hazardous to reach the roof or upper levels, and by necessitating more vigil in working at those levels. Lights are a valuable asset—not merely the pocket flashlight, but searchlights and "spots" to illuminate broad areas, and penetrate the smoke.

Available Force for Ventilating

A factor which seriously complicates ventilating operations is lack of imme-

(*Continued on page* 146)

Weather is often a handicap in top ventilating. Several New York tenements are involved from basement to roof. Men have opened roofs, but humidity and absence of wind tend to hold smoke at low levels. Roof operations under these conditions offer plenty of hazards to firemen.

CHRISTMAS SEASON NO HOLIDAY FROM DEATH AND DESTRUCTION

Fire Claims 77 Dead, Scores Injured as Christmas Trees Continue as a Hazard

THE 1953 Christmas-New Years Holidays lived up to the prophecies of safety engineers who predicted all records of accidental deaths and injuries would be broken over the period from Thursday, Dec. 24, to Monday, Jan. 4. Total Yule holiday accidental deaths were 678—77 of them from fire. Actually, Christmas got into the papers some days before.

Tree Flame-Proofing Campaign Pays Off

Last holidays the Billerica, Mass., Fire Department, Fire Chief Paul H. Roper, prompted a safer Christmas by offering to spray Christmas trees with a fire resistant solution. Hundreds of local persons took advantage of this offer, among them Mr. and Mrs. Alfred Desrosiers of Pond street, Nuttings Lake. Their tree, duly bedecked with ornaments, was given a downstairs front-room position, near a window, where all could see it.

With Christmas only hours away, a fire, which apparently started about midnight in a kitchen oil range, roared through the house. Mrs. Desrosiers, aided by the two eldest of her eight children, managed to rescue all of her brood from what looked like certain death to the neighbors, who turned in the alarms of the fire. She carried out three of the youngest and led the other five, through the smoke and flames to the street, via the only exit available, the front door. She had her charges safe outside when the first apparatus, from Central Fire Station, arrived, to find flames coming through the roof and the windows of the six room house.

Chief Roper in his report to this Journal about this fire credited the flameproofing of the tree with preventing even a worse disaster for the luckless family. "As you will notice on the picture," he wrote, "the tree is quite near the window and the drapes on the window were burned. They are believed to have been of plastic material. The paint on the window casing is all blistered. The needles on the upper part of the tree were blackened but no sign of burning could be found on any part of the tree."

He added: "Had this tree caught fire it would have blocked off the family's only exit, as the kitchen was completely involved with fire which made escape through the rear door impossible. I believe that the fire-resistant solution used to spray this tree retarded its ignition sufficient for the family to make their escape from the building, as all eight children were in bed at the time it happened. The solution used was made from the following ingredients: 9 ounces of borax; 4 ounces of boric acid; one teaspoon of detergent to one gallon of water."

What the good chief modestly failed to mention in his report, but what the newspapers told is that following the fire, Billerica officers and firemen set about raising money to help outfit the stricken family, and to provide toys so the youngsters' Christmas would not be entirely lost. The Central Fire Station became headquarters for the donations that poured in and the firefighters placed the Desrosiers family at the top of their list of persons to receive the toys which they create every Christmas for Billerica children.

Christmas Tree Fire Kills One in Kansas City

Fire caused by lights on a Christmas tree in the reception room of the Cities Service Oil Co., located on the fourth floor of the 12-story V.F.W. Building, Kansas City, brought death to the building superintendent and injuries to several firemen, shortly before Christmas.

The victim, 35-year-old Walker S. Thomas, Jr., died while attempting to extinguish the flames which badly damaged the reception room and caused evacuation of the building at 406 W. 34 street, national headquarters of the V.F.W.

An employee of the Oil firm said he had just stepped off the elevator and was chatting with several other employees, when the Christmas tree, located several feet away in the small reception room, suddenly "flashed" and "flames just shot out."

The men fled downstairs by using a stairway. While flames spread through the lobby and reception room, the superintendent and a negro maintenance man in the basement heard the report over the building's inter-communication system. The maintenance man reported they grabbed an extinguisher and took an elevator to the fourth floor. When they opened the door, they were met by smoke and flames. The extinguisher had no effect on the fire, and the operator said he then closed the elevator door and in the confusion Thomas apparently stepped out of the elevator and was overcome by smoke and fumes. His body, badly burned, later was recovered by firemen.

Photo Courtesy Lowell, Mass., Sun

Spraying of Christmas tree by firemen prevents heavy loss of life. Massachusetts Fire Warden A. R. Hallenborg (left) inspects tree after fire.

The electric clock stopped at 3:52 A.M., recording the exact time of the flareup. The fire department responded to several calls with five pumpers and three ladder trucks. Upon arrival, firemen hurried to the fourth floor by the stairway and broke through a locked door to reach the lobby. It was surmised later the door had been locked to confine the blaze. The victim was found by Fire Captain Joseph Cronin.

Another fire officer, Captain Wallace Parker was overcome by smoke while fighting the blaze but revived and remained on duty.

Yule Lights Set Fire in Union

Two families were made homeless in another Christmas tree blaze in Union, N. J., when a decorated tree burst into flames about 4:00 P.M. The ensuing fire practically destroyed a 1½-story frame dwelling also.

Fire officials said ornamental lights apparently had overloaded the circuit, which shorted and caused the fire, for which two alarms were sounded.

The blaze started in the apartment occupied by Mr. and Mrs. Samuel Crisalli, their three teen-age daughters and a relative. All of the occupants fled to safety. The eight rooms in the structure were badly damaged by the flames which spread rapidly. Firemen used gas masks in attacking the fire.

Fire the "Unwelcome" Gift

Notwithstanding all the efforts to warn the public on the hazards of the Christmas tree and Yule decorations, they contributed again this Season to raise the toll of dead and injured and property destruction by fire, as witnessed by these reports to FIRE ENGINEERING:

ATLANTA, Dec. 17.—Because he could not wait to see what Santa would bring, Christmas went up in smoke for 12-year-old John Wayne Curtis. He peeked into the family closet and lit a match to see what was hidden, and soon all his presents were in flames. Firemen saved only the remains of an electric train from the ashes —and John, who got a burned arm.

OTTAWA, Dec. 21.—A 10-year-old boy, pulling a wire plug linked to Christmas tree lights, accidentally started a fire in a half-century-old school in this city. Damage to the Guiges Roman Catholic School was estimated at $80,000.

BETHEL, CONN., Dec. 24.—The Christmas homecoming for railroad commuters arriving here this afternoon will go down as one of the warmest on record. The station caught fire.

Passengers, many loaded with Christmas gifts, had just stepped off the 12:18 P.M. Norwalk-to-Danbury shuttle of the New Haven R.R.'s Pittsfield Mass. line, when the blaze broke out in the freight storage section of the 50-year-old wooden station. Volunteer firemen from Bethel and Redding, Conn., quickly doused the flames, damage being unofficially estimated at $5,000.

Many Mexicans Killed in Christmas Church Panic

One of the worst tragedies of the holidays was the death of 23 Mexicans and injuries to some 200 more, on Christmas Day, in the mountain village of Temoaya. There was no fire, all of the deaths and injuries resulting from a panicky stampede, as a result of a lighting failure in the village Roman Catholic Church.

Many of the 3,000 people jammed into and around the church for the Christmas midnight Mass were country people, unused to electricity. The church's two doors were blocked by the worshippers and, when somebody stepped on a wire on the floor, there was a blue flash, the lights went out and there followed an immediate stampede for the exits.

The parish priest, Rev. Jose Cruz, attempted to quell the panic, but without success. The church's battery-powered loudspeaker system was still operative and he told his congregation there was no danger and to go out in orderly manner. But they paid no attention; it is doubtful if they ever heard him. The flickering lights of the candles on the altar and around the shrine failed to provide necessary illumination and, in the dark members of the congregation fought, pushed, and trampled on those who fell.

"When the lights came on again," said the priest who was officiating, "there was nobody in the church but me and the victims." The following day, police gave Father Cruz special protection because some of the survivors blamed him for the short-circuit which precipitated the trouble.

Authorities in Toluca, 40 miles west of Mexico City, went to Temoaya to prepare an official report on the tragedy. The bodies all showed signs of death due to asphyxiation.

Anti-Fire Tree Ornaments Raise Firefighters' Doubts

In November, the Chicago Board of Health warned that a Christmas Tree ornament, sold with the claim that it would act as a fire extinguisher might produce a pungent, toxic gas, and ordered the ornaments off the market, after laboratory tests of the "fire extinguishers" were conducted. These tests, according to Dr. Herman N. Bundesen, president of the Board, showed they contained eight ounces of carbon tetrachloride which, if spilled in the average size living room, would generate a heavy concentration of vapor.

In New York, no action was taken to ban the ornaments. The City health department reported that the protection provided against a blazing Christmas tree outweighs the risk that carbon tetrachloride fumes, might seep out of the globular glass container. Tests were to be made later of the rubber cap sealing the globe.

It was different in New England however, where fire chiefs were warned by the State Fire Marshal that "a Christmas tree decoration designed to explode at a certain temperature and extinguish blazes is dangerous."

Fire Marshal Robert F. Ulm, who issued the warning, said also there is nothing illegal about the ornament and that his department has no right to prevent its sale. He did express doubt of its effectiveness, saying that "it is questionable if it would spray among the branches onto a fire."

Air Base Has Christmas Kids Party

Fire fighters of the Edwards Air Base Fire Department, Edwards, Calif., built and painted Santa's sleigh and provided the reindeer to pull it, for the Base Children's Party held Wednesday Dec. 23rd.

General Chairman of the affair was Norris T. Morton, (Major) U.S.A.F., Chaplain of the Base, who inspired the creation, which required two months of effort by the firemen.

Over 1,000 children and Edwards personnel participated in the Children's Party, and in the base-wide carol sing, held prior to the youngsters' gathering. The crowds gathered in front of the Chapel to watch Old Nick ride up in his "sleigh jeep." Gifts and entertainment were provided by several committees working with Chaplain Norton and the Base firefighters.

Santa's sleigh, built by fire fighters of Edwards Air Base, Calif., adds to gaiety of Base children's Christmas party.

Firemen in Another Kind of "Rescue"

It could have been a more tragic Christmas for the A. H. Thompson family of Opelika, Alabama, whose 18-year-old daughter Barbara was critically burned a few days before Christmas but the family learned, as did the whole town of Opelika, that Barbara will live, and her home, which it was

afraid would be lost to pay doctor's bills, would be secure.

Barbara, an Opelika High School cheerleader, and an ROTC sponsor, rushed into her Fruitland street home after the school Military Ball the night of Friday December 18th, and stood before a heater to get warm. Her nylon evening dress blazed and she was critically burned before her father could dash to her rescue.

For several days Barbara lingered between life and death. Her father, who suffered burns while fighting the fire, was currently unable to work. Prospects were for a sad Christmas. Such was the situation when a group of citizens of the Inter-Club Council of Opelika met to see what could be done to ease the tribulations of the Thompson family.

Investigations disclosed that a minimum of $2500 medical expenses would have to be incurred to save Barbara; a maximum estimate of $4000 was made by the attending physician. Barbara, it was said, would require eight weeks to four months hospitalization before returning home for a similar period of convalescence. Mr. Thompson saw his modest home and small bank balance lost to him to meet the bills. And that is where his fellow neighbors stepped in.

Chief Sparks Diive

Fire Chief G. A. (Squirrel) Mitchell of Opelika was named chairman of the drive for Barbara. Mayor Ealon Lambert officially declared Wednesday, December 23rd, as "Barbara Thompson Day," and the good folks of Opelika went to work. Cheerleaders, ROTC cadets, and student schoolmates of Barbara organized to canvas the city. The Opelika Hospital Auxiliary started things off with $100. Voluntary contributions poured in. Radio stations, the press, civic, fraternal and religious organizations all joined up and Treasurer Sam Morgan soon reported a total of $5,152.50, which would more than meet the estimated medical expenses.

Charlotte Firemen Also Play Santa

Opelika wasn't the only city to open its heart and its pocketbook for the unfortunate, on Christmas Day. Santa Claus rose Phoenix-like from the flame-gutted home of Lee Johnson on Kenney Ct., December 25th, when Charlotte firemen saved the little family, and then collected money to replace its burned holiday dinner.

While preparing Christmas morning breakfast, Johnson said he somehow let the oil stove get out of control and it exploded and flames quickly enveloped the kitchen. The Christmas goodies were burned beyond use, although firemen arrived in time to save the building and some of the furniture. Johnson and his wife and their two children barely escaped with their lives.

Under direction of Assistant Chief G. L. Barnett of the Charlotte Fire Department, the men of the department who operated on the fire, dug down into their pockets and collected money for the family. They went to the nearest grocery store and bought a new complete Christmas dinner for the family.

(From D. G. SPENCER)

Aerial view of the central section of Pusan showing path of fire which swept through the refugee packed city. The fire gutted the Pusan Railway Station (extreme upper right), the Army Chapel (left of station), U.S. Army Base Headquarters (four-story building left of Chapel), which directed the supply of billions in war equipment since 1950.

1953 Fire Losses Highest on Record

Fire damaged or destroyed an estimated $903,400,000 worth of property in the United States last year (1953), the National Board of Fire Underwriters reported. This is 15.1 per cent higher than last year, when monthly losses totalled $784,953,000.

According to Lewis A. Vincent, NBFU's general manager, 1953's fire losses are the highest on record for the third consecutive year.

He said the losses reflect to a large degree the nation's expanding economy, particularly those insurable values exposed to fire that have increased proportionately and include the result of the disastrous fire last August at the Livonia plant of the General Motors Corp.

Mr. Vincent noted also that losses for the month of December were particularly heavy, amounting to $83,440,000 an increase of 22.6 per cent over losses of $68,064,000 for the preceding month (November) and an increase of 12.6 per cent over losses for December, 1952, when they amounted to $74,127,000.

These estimated losses include an allowance for uninsured and unreported losses.

$20 Million Loss in Pusan Fire

A Korean housewife neglected her little charcoal oven in a tenement shack at Pusan, Korea, Nov. 28th, last, while a brisk wind blew outside, with the following tragic results:

Property listed as worth $20 millions was destroyed.

Between 3,000 and 6,000 shacks, homes and buildings, including the railroad station, two major buildings at the headquarters of the United States Army's Korean base section, and offices of three daily newspapers were razed.

At least three persons were counted dead and 40 injured, including 20 American soldiers.

Many thousand persons were deprived of living quarters. Hundreds of thousands of Koreans and American soldiers in the city of 1,000,000 fled the swiftly spreading flames, some across bridges to Yongdo Island.

Several thousand U. S. and South Korean soldiers fought the flames, using every available piece of fire-fighting equipment, bulldozers and other facilities.

The wind-swept fire, roaring unchecked for more than 11 hours, cut a mile-and-a-half-long by half-a-mile-wide swath into the heart of Pusan. The fifty-foot-high flames for a time endangered the U. S. Embassy and tens of millions of dollars worth of equipment and material on the American docks.

Following the fire, American Army officers conferred with Korean civil assistance command with a view to setting up a huge tent city and to get rid of shack housing areas constituting fire hazards. Meanwhile thousands of refugees huddled in a huge Army warehouse on a pier.

Railroad Station Destroyed by Fire

The Princeton Junction, New Jersey, station of the Pennsylvania Railroad Company, a site familiar to generations of Princeton University students and graduates, was destroyed by fire during the early morning hours of December 27th, 1953.

The fire is believed to have been caused by mice chewing on the electrical wiring, the cause of a minor fire at the station a few years ago. The caretaker, Virginia Worrilow, 62 years of age, was rescued from a second story porch where she fled after being awakened by the crackling flames. Her pet dog perished in the flames that destroyed the two story frame building.

The station is on the main line of the railroad and is at a point where passengers for Princeton and the University change for the five mile trip to Princeton.

WILLIAM C. PECK

System for Automatic Ventilation

A proposed system for automatic ventilation of a burning structure will be of interest to fire department officials who are currently reviewing the articles on ventilation appearing in this Journal.

The inventor, Tom Harding, an architect of Little Rock, Ark., claims for his system that it is a simple, inexpensive and automatic means of clearing an involved area immediately at the beginning of a fire, thereby preventing suffocation, while controlling fire travel, mushrooming, and furthering fire extinguishing operations.

The system, (see accompanying diagram) is primarily an automatic arrangement, and is especially intended for installation in basements and buildings without outside openings. It's major objective is to prevent smoke and gases from entering adjoining rooms and corridors, by channeling the discharge of the contaminated atmospheres to an outside stack without inconveniencing occupants, and permitting them easy safe access to elevators or stairways.

As shown in the diagram, a duct is carried through the corridor which becomes, in action, a "ventilator." The system operates immediately at the beginning of a fire and is actuated by rate-of-rise unit in the area. This, in turn, causes a shutter to be opened when released by the bi-metal detector, or fusible link. An electric-eye may be used in connection with activating mechanism if desired. Forced draft also may be provided by locating a protected motor high in the stack.

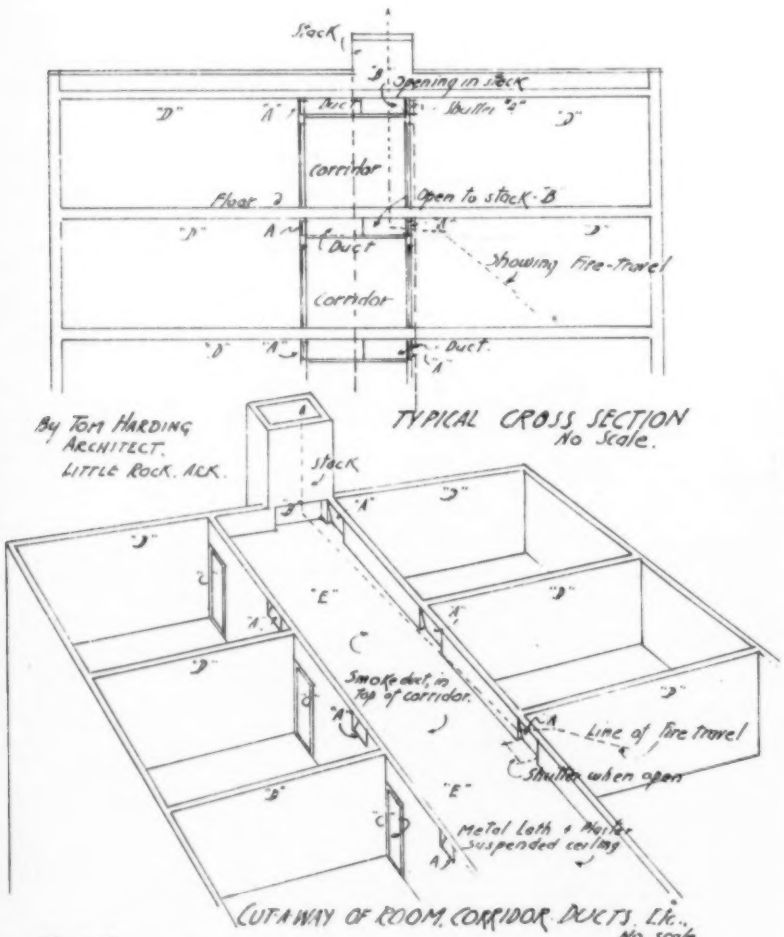
A shutter is placed in each area or room, at a point farthest from the door entrance to the area, in order to keep firemen out of the line of discharge, which is to be at the ceiling line on the corridor wall. When the shutter opens as a result of rapid temperature increase, the discharge is taken to the stack by way of the duct and on out to the open air. Shutters are provided for all rooms and corridors.

The duct is to be unobstructed to prevent "build-up" inside it and naturally must be tight to prevent spread of fire by leakage. The duct itself is formed by the corridor walls at the side, by the slab above at the top, and by a back-plastered lath and plaster suspended ceiling for the lower side. Shutters are to be insulated and the assembly connected to an approved type fire alarm system.

His product, the designer states, is not intended to compete with a sprinkler system. It may well be used with fog. Passage doors are to be the self-closing type. All items used in construction must meet the Underwriters specifications.

The system may be used in private dwellings, convalescent and nursing homes and the like, with suitable modifications, such as the use of plywood and fireproof paint, which would retard burning until the building is vacated.

According to the designer, many changes may be made without departing from the spirit of his invention, or affecting his patent.



Olean Milling Plant Destroyed

A raging fire razed the three-story frame plant of the Acme Milling Co., in North Olean, N. Y., within three hours with loss that may reach $150,000 on Nov. 11 last. Also badly damaged was the adjacent two-story brick office building.

Olean Fire Chief Frank W. Savage reported that indications showed the fire originated in an elevator, which was moving grain into a third-floor bin and which became clogged, causing its motor to overheat. With the lift shaft clear above, the flames quickly roared into the upper floors.

Chief Savage called out off-duty personnel to augment the regular complement of manpower and apparatus and requested the Allegany Volunteer Fire Department to locate one of its units in Olean Fire Headquarters. All 28 members of the Olean Department fought the fire which was declared under control about 4:00 P.M.

Six employes of the big plant, at River and Pine streets, near the Erie Railroad Depot, escaped unharmed when the blaze was first noticed at 10:15 A.M. Within fifteen minutes from the time the alarm was sounded, the fire was through the roof and heavy clouds of smoke billowed over most of the city. Before 11:00 A.M., a large section of the roof caved in, necessitating the removal of a crew of men who were fighting the blaze from an outside fire escape.

A drum of oil exploded outside the structure about 35 minutes after the fire started, which brought an order to clear all spectators from the area. When the fire threatened to communicate to the nearby bulk station of an oil firm, a fire truck and members of the Socony-Vacuum Refining Co. were called to stand by with foam.

A watch crew remained throughout the night pouring water from two hose lines onto the smoking ruins.

Train Severs Fire Hose

Firemen of West Chester, Penn., aided by forces from Kennett Square and Longwood, encountered obstacles in fighting a fire that virtually destroyed the Lenape Hydraulic Co.'s welding shop on Route 52, six miles south of Philadelphia, January 23rd.

Exploding acetylene welding tanks, which shot debris high in the air, endangered fire fighters. To cap the climax, a freight train severed two hose lines at the height of the blaze.

Firemen then drew water from Brandywine Creek, while the lines were replaced. Although the fire was confined to the large welding building, the building was destroyed.

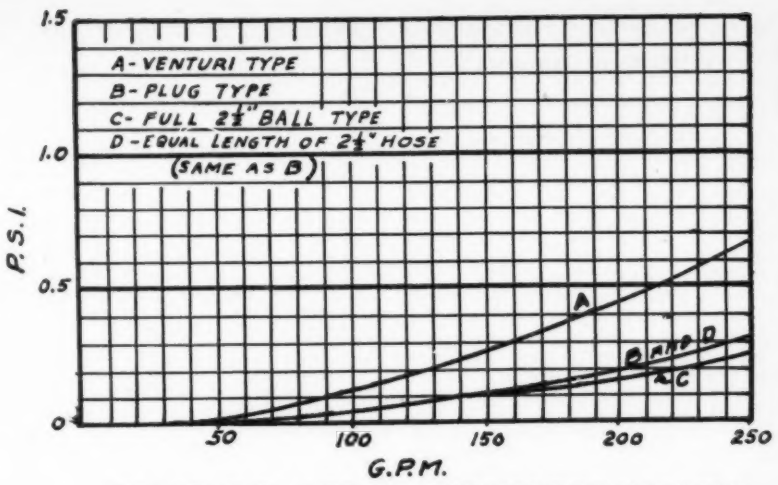
Pressure Loss Through Discharge Valves

A sub-committee of the Fire Apparatus Manufacturers' Association, under the direction of H. W. Yocum, recently ran tests to determine pressure loss in pump discharge valves at different rates of flow.

Tests were made on three types of 2½" fire pump discharge valves. The three types tested were: (1) a plug type valve with rectangular waterway through the plug; (2) a ball type valve with a full 2½" diameter opening through the ball; and (3) a venturi type ball valve with a 2" diameter opening through the ball.

The valves were set up in a 2½" hose line, and all joints between the 2½" fittings were aligned as closely as possible and any sharp edges between the fittings due to misalignment were smoothly ground off. The rubber washers in the hose couplings were flush with the inside surface. In addition, a stream straightener was placed in the tube about ten inches in front of the valve being tested, to reduce turbulence of flow. The drop in pressure across the valve was determined with a differential mercury manometer. These readings were converted to P.S.I. to plot the curves (Fig. 1). Rate of flow was determined with standard fire stream nozzles and a pitot gauge.

In the plug valve, the 2½" diameter circular section at the entrance gradually blends into a rectangular section of the same area as the entrance and then back to circular at the outlet. As indicated by the curves, this gradual change in stream shape, without appreciable increase in velocity, results in a pressure drop nearly as low as that in the valve with the full 2½" diameter circular passage. The pressure drop in the venturi type valve for rates of flow above 50 G.P.M. is higher than the drop in the other two types. This higher loss is attributable in part to the increase and decrease in velocity of the stream through the venturi section. Another part of this higher loss is logically due to turbulence caused by the ¾" pipe tap necessarily located in the diverging nozzle at a point of higher velocity than in the case of valves having full area opening.



PRESSURE LOSS IN DISCHARGE VALVES

FIG. 1

Canada U. L. Expands

Construction of a 10,000-square-foot office and laboratory, which will provide the nucleus for an extensive long range building program of the Underwriters' Laboratories of Canada, formally got under way when its Honorary President, W. E. Baldwin, turned the first spadeful of earth.

Underwriters' Laboratories of Canada maintains and operates laboratories and an inspection service for the examination and testing of appliances, devices and materials, as to their life, fire and casualty hazards, and crime prevention. It is a non-profit organization sponsored by the Dominion Board of Insurance Underwriters. E. F. Tabisz is general manager.

At a luncheon following the simple ceremonies of the ground breaking, L. L. Lewis, president of the Laboratories, presented Mr. Baldwin with a silver replica of the spade used. In his remarks Alex. S. Hamilton, chairman of the planning committee, paid tribute to the 33 years of interest displayed by Mr. Baldwin in the work of the Laboratories. In reply Mr. Baldwin praised the Laboratories, emphasizing the importance of the new facilities.

The Dominion Board of Insurance Underwriters was represented by N. G. Bethune, president, and A. Leslie Ham, manager. Guests at the ceremony and luncheon included Roy B. Whitehead, Ontario Superintendent of Insurance, directors and officers of the Laboratories, the Dominion Board of Insurance Underwriters, and the Canadian Underwriters Association.

W. E. Baldwin, Honorary President, Underwriters' Laboratories of Canada, turns the first sod for the new Head Office and Testing Station being built by the Laboratories at the Scarborough, Ontario, site. Pictured from left to right are: Alex. S. Hamilton, G. C. Hunter, A. Leslie Ham, J. E. Haskins, Roy B. Whitehead, W. E. Baldwin, R. L. Young, N. G. Bethune, E. F. Tabisz, and L. L. Lewis.

Keeping Tab on Arsonists

A new plan to keep track of known or suspected arsonists in the State of Illinois was reported by Sanford Giles, State Fire Marshal.

The Marshal has arranged with penal and mental institutions to notify his office whenever firebugs are turned loose. The Marshal will then pass on such information to law officers in the arsonist's community. Giles will also notify the National Board of Fire Underwriters.

Such a system, Giles believes, will enable investigating authorities to check the way in which a fire was believed set, against the arsonist's records, on the theory that fire-setters generally use the same method.

The suggestion has been advanced by others who have tried this method that the respective fire departments also be notified as well as law enforcement agencies.

With Our Readers

About Fire Prevention

To the Editor:

Upon reading about the fire prevention efforts among school population of Colorado Springs, Col., it occurred to me other readers might be interested in the method we invoke here to get our message across to the lower grades.

During Fire Prevention Week, at our request students of the 5th and 6th grades of all schools are urged by their teachers to write "slogans" teaching some fire prevention lesson.

Returns are most gratifying . . . the number entering the contest is considerable. Some of the original "jingles" are clever, but above all, even though most of them are remote from rhyme, we note that they are getting the idea. They have learned what fire prevention is, and why it is. They know many things that cause fires, and nearly all of them stress carelessness.

We give cash prizes of $3.00 to the best, $2.00 to the next best, and $1.00 to the next three, making it interesting for enough of them to enter. It may be of interest to note that this activity is not conducted exclusively by the fire department (we embrace two adjoining F.D.'s because they are in our school district), but the chiefs and others together with school officials and business men form the committee. Our funds are provided from various sources, some official. Of course, we have speakers and movies for schools and service clubs. We feel we are making progress.

PAUL BABCOCK, Nyack, N. Y.

"The Play's the Thing"

To the Editor:

We have found that working with our Superintendent of Schools on our fire prevention program has proven very effective.

Our department believes that when a youngster takes a part in a playlet or helps in the making of a large fire prevention poster, he or she will always have fire prevention embedded in his or her mind. This is the first attempt of our schools in this phase of fire prevention and the youngsters and teachers alike are showing a desire to continue along these lines. Of the playlet, our local paper had the following to say:

Woodland Class Shows Fire Skit

The program for the October assembly at Woodland School presented recently by Robert J. Kiely's sixth grade class. Red is its theme "Beware of Fire." It graphically told the story of prevention of fire through an understanding and control of fire hazards. The class did so well that it was invited to present the program at the Sunset Ridge School, and town fire authorities praised it as one of the finest examples of such work ever staged here.

HARRY HINKLEMAN,
Fire Marshal,
East Hartford, Conn.

Novel Fire Protection Essay

To the Editor:

During Fire Prevention Week each year, our Department sponsors an essay contest in the junior high schools of our city. Last year we had one submitted which I thought was quite outstanding and treated the problem from an altogether different view.

This essay was written by Stephanie Blackburn and we have permission of her parents and the school to use it in any way we see fit. I send it along with the thought you might like to use it.

The Autobiography of a Flame

Whether you know it or not, each family and household has a flame of its own. We may seem like servants, always willing to help. Actually we are malicious and ever wanting to do something destructive.

From my very start I have always wanted to do something really big. I thought I would have my chance the other day when the lady of the house left the iron on when the phone rang. Well, the iron fell over, and did I have fun! First I scorched the dress, then the ironing board, and soon the whole thing was engulfed in crackling flames. My one objection to living here is that whenever there is a fire, they call the Fire Department right away, and my fun sizzles out.

Oh dear, I'm so bored. I do wish that little boy would get some matches to play with. Then maybe I could fulfill my ambition. I have been furious since the nosey little flame next door sneaked out of her incinerator and got into my garage. It was full of oily rags and junk I'd been saving for months, and she burned it to the ground. I wish she'd mind her own business!

Even at that I'm better off than my cousin down the street. He has a terrible time. He has had to stay in a furnace to even keep alive. His family is exceedingly careful. They never leave loose cords lying around; they always repair loose connections; they never smoke in bed; the children are well trained; and they are all-'round cautious.

Before I came here I lived in an oil field, but I had to move because industrial fire prevention has improved so much that it is no fun to live there any more.

My grandfather has often told me of his youth. He and some of his friends once burned a whole forest. What great fun it must have been, leaping from limb to limb with whole mountains on fire. Those were the good old days!

Things are so different now. Each time Fire Prevention Week comes around we grow more and more afraid. Afraid that people will follow the simple rules of fire prevention, and we will become nothing but slaves.

CHIEF W. J. TAYLOR,
Burbank, Calif.

East Hartford, Conn., schools teach fire prevention. Here are some of the posters made by school children.

No Weakening in This "F.P. Week"

To the Editor:

Several years ago Assistant Chief Rutz Anderson of the Mt. Vernon, Wash., fire department thought a one-week program during fire prevention week ought to be tried out in Mt. Vernon. As said above, that was several years ago. The last time I talked to Rutz he said he hadn't completed Monday morning yet and Friday's work will never come around. He found out a good fire prevention program, properly carried out, can never stop, or even slow down.

The department's number of runs has increased, but their total loss has dropped. No more of this delayed alarm nonsense. And they don't get angry with people over the "unnecessary alarms" that are now phoned in with good intent.

When Rutz started his program there was a large percentage of skeptics among not only the 40 volunteers, but among the 7 paid men too. At the beginning, Rutz thought he would be glad when the "Week" was over and the work done. That was several years and several "F. P. Weeks" ago. The work is just started. Today it is safe to say there are no skeptics among the volunteers, the paid men or the people they serve.

There is a lesson to learn from Assistant Chief Rutz Anderson—and it isn't limited to the City of Mt. Vernon, Wash., and Skagit County Rural Fire District No. 1, which they protect from fire mainly by preventing fires.

A. R. ALAWAY (USN)

U.K. Fire Services Divided on Telephone Alarms

To the Editor:

I refer to your leader in the December issue about the fire alarms and telephone cotroversy. May I say that your statement about the Fire Services in the U.K. being greatly in favor of street fire alarms is, in my opinion, not quite correct.

It would, I think, be fairer to say that British Service opinion on the respective merits and demerits of the fire alarm and telephone systems for calling Fire Brigades is about equally divided.

In some cities here the alarms are being retained because they serve a useful purpose, in other they are being dismantled because they do not. Personally, I regard the matter as being one that will always remain controversial.

The answer appears to be that what suits one area does not necessarily suit another, and I think the same applies to your country. If fire alarms are serving their purpose retain them until a better, more efficient and cheaper means of calling the Fire Brigade. *Fire Protection Review* takes the attitude that so far as the U.K. is concerned there is no useful purpose served in claiming for any one system a hundred per cent efficiency. It is a matter that individual Brigades can best settle in accordance with their knowledge of the needs of their areas.

Yours sincerely,
GEOFFREY F. D. PRATT
Editor

Fire Protection Review
154 Fleet Street
London, E. C. 4, England
Jan. 15, 1953

Correction

To the Editor:

Your article appearing under the column headed "The Watch Desk" on page 1126 of the December issue of FIRE ENGINEERING is far from correct.

The building wasn't about to be razed; it was in the process of being torn down. The roof was entirely removed, windows on upper floors removed and a portion of one external wall knocked out.

This fire wasn't set to try out new ideas. It enabled our city to have a real honest-to-goodness fire picture that could be used to further Fire Prevention work in our city and in many other communities far afield.

There weren't barrels of inflammable material; there was a small amount of combustible material. Any refrigerant pipes remaining in the building were only small sections. The interior contents and appurtenant parts of the building (anything of value) had been removed by the building wreckers several days before the incident.

If this simulated fire gave the boys more trouble than the usual "non-streamlined run-of-the-mill fires," as you quote them as saying, then all I can say is "we aren't getting the men today."

For the records: One man suffered lacerations from flying glass from one broken window pane.

JOHN F. HOWARD
Deputy Chief, Division One
Boston Fire Department

Editor's Note: As anyone reading the item in question must know, our story never directly or by inference, discredited the Boston Fire Department. We may sometimes get facts twisted—particularly when the public press which it quoted in this instance is off the beam, as it evidently was in this case. The editors cannot always take time to verify the accuracy of every newspaper story which comes over their desks, particularly those press stories which are slanted in a humorous vein, as this yarn obviously was.

It is a pleasure to know that Boston fire fighters read right down into the fine print of this Journal, just as we are glad to publish the Chief's letter, and our regret that the source of our information for the story in question was in error.

Ventilation—and Politics

To the Editor:

I have been reading your editorials in FIRE ENGINEERING and have gotten a great deal of good from them.

After reading this month's magazine (November, 1953) I am writing to tell you you are exactly right about ventilation, and the use of masks and smoke ejectors.

We have been working very hard with our men to get to the seat of a fire quickly, and to prevent water damage, as occurs when you throw water into the smoke. This job of fire fighting and fire prevention isn't just a "job" any more, like it was thirty years ago. Men should get all the training and all the books they can to study for their work. They should know that politics will not fit them for their tasks as fire fighters.

As you have said in some of your editorials, it is when we run into politics that we run into trouble. It has always been my thought that when a man joins the fire department he should devote his time to learning the business of firemanship instead of seeing who can be elected.

In some of the fire schools I have attended I have heard teachers sound off on the subject of "politics and fire fighting"; there seems to be the thought in the minds of many that you've got to have politics, and there isn't anything can be done about it. I wonder.

Maybe there will have to be politics, but politics will never ventilate a smoky fire, or put it out!

F. L. CROUSE, Chief
Huntington, W. Va.

Ownership at Alarm Systems

To the Editor:

I have heard and read many arguments recently in regard to the telephone company taking over the municipal fire alarm system but I wish to congratulate you and your magazine for the fine article in the December issue.

Municipal fire alarm systems belong to the city and they should be kept that way. Unless the fire alarm system is being run in a haphazard manner, it is almost impossible for anyone to come along and offer better service for less money.

Your article covered the subject in a thorough manner and an impartial manner.

Sincerely yours,
H. C. OEFINGER
Supt. Fire Alarm
Stamford, Conn.

Thinks We Are Honest!

To the Editor:

For the first time, gentlemen . . . in many years of reading (and writing) letters to the editor, I have come across a printed answer which says, "the fault lies *not* with the printer, but with the editor." Taken verbatim from your December, 1953, issue.

(*Continued on page* 146)

Heroic Firemen Lose Lives When Attempting Rescue

Two Rochester, Minn., firemen and a nine-year-old boy they were trying to rescue were drowned on December 24 when thin ice on Silver Lake gave way beneath their weight. Firemen Ambrose J. Riley and Stanley O'Brien crawled along ladders in an effort to reach John Paul Stephenson, who was clinging to the inch-thick ice, when the ice gave way. The picture above shows bystanders on the shore waiting helplessly, while the two firemen (center and right) and the boy vainly struggle just before going under.

News of the Manufacturers

New Communication Devices

Two new devices for short or intermediate range communication—a battery-powered megaphone for distances up to a quarter of a mile and a radio transceiver for two-way communication—have been announced by Stewart-Warner Electric, the television, radio and electronics division of Stewart-Warner Corporation, 1826 Diversey Pkwy., Chicago 14, Ill.

New Stewart-Warner Portafone

The radio transceiver, called the "Portafone," carries Federal Communications Commission Class B radio telephone type approval, and operates in the citizens' radio band at a fixed frequency of 465 megacycles. The citizens' band is that segment of the ultra high frequency spectrum which lies between the Land Mobile Radio Services and the UHF television channels.

The Portafone may be operated as a portable radio station when used with a battery pack, or as a fixed central radio station by connecting it to a special power pack designed to plug into any 115 volt, 60 cycle, AC electric outlet.

Chief Deputy Fire Marshal Albert Peterson, assistant to Commissioner Corrigan, head of Chicago's Fire Department, using a Stewart-Warner power megaphone at street level, directs men during a 3-11 fire recently.

Or, it may be operated in an automobile by plugging a special adapter into the cigaret lighter socket of the car's instrument panel.

It is available now for purchase and use by fire departments, private citizens, as well as commercial, governmental agency or industrial users, according to Col. John R. Howland, commercial sales manager of the company.

The "Portafone" requires an FCC station license, but not an operator's license, Col. Howland stated. It is sold in pairs, each of which combines a transmitter and receiver in one instrument similar in appearance to a telephone handset. Weight of the instrument is 28 ounces.

The power megaphone is a hand-held device, which embodies a microphone, a powerful speaker and batteries in a single unit for amplifying the voice. It weighs five pounds, five ounces, is operated with six flashlight batteries, and is made ready for instant operation by pressing a trigger switch in the handle.

It provides projection of the human voice up to a quarter of a mile, and the flashlight batteries which power it will last for as long as three weeks of normal intermittent use for eight hours a day, Col. Howland stated.

Seagrave Announces Changes

The Board of Directors of the Seagrave Corporation, Columbus, Ohio, recently announced that, effective February 1, 1954, Howard B. Spain, who has been with the Seagrave Corporation since 1910, and has occupied the position of president since January, 1925, retired from that position, and accepted the chairmanship of the board of directors of the corporation. He will actively participate in the business and policies of the company.

J. Lester Stevenson

J. Lester Stevenson, who has been with the Seagrave Corporation since 1916, and has been vice president in charge of sales since 1944, has been named president of the company.

Ratzer Named Pyrene Vice-President

Arthur F. Ratzer has been named Vice President of Pyrene Manufacturing Company, makers of fire equipment, Newark, New Jersey, according to S. R. Baker, President and Chairman of the Board.

Mr. Ratzer first joined The Pyrene Company, Limited, in London in 1935. Starting as a chemist in the Research Department, he subsequently was in charge of chemical manufacture, served as Assistant to the Chief Engineer and later became Manager of CO_2 Division and Manager of the Foam Division. He has traveled throughout the world on company assignments.

In 1950 he joined the parent company in America as Manager of the Foam Engineering Department. Since February, 1953, he has been Executive Assistant to the President. He is also President of the Chemical Concentrates Corporation, makers of fire extinguishing compounds, Fort Washington, Pennsylvania.

Waterous Elected N.A.M. Director

The Fire Fighting Equipment Industry was honored in December by the election of Fred A. Waterous to the Board of Directors of the National Association of Manufacturers.

Fred A. Waterous

Waterous is president of the Waterous Company, St. Paul, Minnesota, manufacturers of fire pumps and hydrants since 1886, and is currently president of the Fire Apparatus Manufacturers Association (F.A.M.).

Laswell to Head Pyrene and C-O-Two Sales

Maynard A. Laswell, Vice President for many years of the C-O-Two Fire Equipment Company, has been also made Vice President in charge of sales of the Pyrene Manufacturing Company, according to an announcement by S. R. Baker, President and Chairman of the Board. The affiliated companies have general offices and factories in Newark, New Jersey, and manufacture a complete line of approved fire extinguishers, air foam playpipes, carbon dioxide and air foam fire extinguishing systems, as well as smoke and heat fire detecting systems.

Maynard A. Laswell

Laswell was the founder of the C-O-Two Fire Equipment Company on the Pacific Coast. In 1933 Pyrene and

(*Continued on page* 170)

"We've cut our hose costs in half

BY STANDARDIZING ON PREMIUM QUALITY

EUREKA
Multiple-Woven"

THE "CHIEF" knows that Eureka MULTIPLE-WOVEN actually costs *far less per year* than hose selling at only half its price! This unique, top quality hose not only lasts up to 6 times longer but also provides a much greater degree of safety and dependability throughout its long life.

Eureka MULTIPLE-WOVEN hose is circular-woven on special Eureka looms so that all plies are *interwoven* into a homogeneous jacket. There's no room between plies for water or dirt to collect, as in loose-jacketed hose. Balanced weaving and controlled curing eliminate excessive writhing and warping, making it safer to handle on ladders. Its smooth-interior filler ply reduces hydraulic friction, assures maximum nozzle pressure.

Eureka makes and sells all grades of fire hose. But, for true long-range economy—the economy of quality—we recommend you invest your future hose appropriations in dependable, long lasting Eureka MULTIPLE-WOVEN. There's no other hose like it!

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York, 13, New York • *Division of United States Rubber Company*

GREAT SOUTHERN LIFE INSURANCE COMPANY protects its property *Automatically* ...

GETS BETTER FIRE AND BURGLARY PROTECTION AND...

SAVES $6000 A YEAR

"...your automatic services give better protection against fire and burglary, and save us about $6,000 a year."

Pat M. Greenwood, President
Great Southern Life Insurance Company, Houston, Texas

To watch over its new building "around the clock," *automatically*, Great Southern Life chose a combination of ADT Central Station Burglar Alarm and Automatic Fire Alarm Services.

President Greenwood's statement typifies the comments of many executives, from coast to coast, who know that ADT Automatic Services give them more security than any other method... and at less expense.

ADT Electric Protection Services guard every type of property, new or old, sprinklered or unsprinklered. The appropriate ADT Fire Alarm Service will detect fire and notify the fire department *automatically*. ADT Burglar Alarm Service will *automatically* summon police when burglars attack. ADT Heating and Industrial Process Supervision will *automatically* detect and report other abnormal conditions.

ADT guards, electrically, many billions of dollars' worth of tangible and intangible assets, owned by 55,000 subscribers in 1600 communities. An ADT specialist will show you how combinations of engineered services can protect *your* property.

Call our Commercial Department if we are listed in your phone book; or write to our Executive Offices.

ADT

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
A NATIONWIDE ORGANIZATION
Executive Offices
155 Sixth Avenue, New York 13, N. Y.

Short Cuts and Gadgets

CUTTING EXTINGUISHER WEIGHING JOB

Weighing 209 fire extinguishers once a week to make sure they contain the proper volume of CO_2 used to be a three-day job at Food Machinery and Chemical Coroporation's Ordinance Division.

Portable scale simplifies job of checking carbon dioxide extinguishers.

Now, thanks to the ingenuity of Fred Proud, one of the FMC maintenance employees, this same job is accomplished in only four hours.

Previously, Proud used to drive a fork-lift truck, loaded with a pallet and large, cumbersome scale, around to each extinguisher station to make his weekly volume check. Now all he carries is a light weight, $18 hanging scale, which fills the same purpose. The small hand scale is hung from the extinguisher bracket as pictured hereon and the extinguisher is attached to the scale for weighing. Presto!

Besides saving 2½ working days, Proud's job is easier and the fork-lift truck is released for other and more useful work.

* * *

PUMP OPERATING HINTS

Especially in freezing weather, drain all water from volute case, main body, gauge connections, cooling line, etc. If pump has been handling salt water or dirty water, connect pump to fresh water hydrant and operate pump for a minute or so in order to thoroughly wash out pump. Check the oil level and the priming ability of the pump.

When operating pumps, especially positive displacement types, protect soft or hard sleeve from wear by use of chafing blocks if necessary.

When connecting to hydrant with hard sleeve, make hydrant connection first, which will permit pumper being moved.

When making connection to hydrant, check 2½" blind caps for tightness, before opening hydrant valve.

If 2½-inch blind cap of hydrant is missing, use 2½-inch blind cap off pumper, attach play pipe, or make connection to same by use of adapter.

When supplying one hose line at relatively high pressure, and it is desired to supply water to another hose line, it may be necessary to reduce pressure momentarily to open discharge gate.

The pumper operator should be promptly notified when there is no longer a need for a high pressure stream, such as when overhauling and wetting down. This will permit him to supply the line with hydrant pressure and disengage pumps.

When small line is no longer required, booster pumps shall be promptly disengaged. This is important as churning of water in pump will cause it to heat, which may cause serious damage to pump.

Check oil in supply tank for priming pump after each use. If oil continues to flow from priming pump, check air vent hole in copper tube between supply tank and priming pump.

On centrifugal pumps, pressure position is used and considered where pump is used for one hose line, either long or short. Capacity position is for more than one line of hose whether long or short except in extreme cases where there are exceptionally long lines of hose using small tips, in which case use pressure position. No definite instructions can be given as to what positions, or in case of rotary pumps, pump transmission speeds, should be used. The length of hose line, size of nozzle, pressure required, and so on, are all variable factors which will affect the action of the motor, and in turn determine whether pressure or capacity should be used.

Acknowledgement: The above has been reproduced from the District of Columbia Fire Department manual on Pump Operation.

* * *

STILL ANOTHER COMPANY NOTICE FORM

We thought we had exhausted all the possibilities, when it came to the company and departmental notice cards and other forms used to post membership on what's to come, and when, but here's still another.

It is from Robert C. Burgess, secretary, Canaseraga Fire Co., Inc., of Canaseraga, N. Y., who writes: "The parade goes on. Here is another meeting card for your collection. The simple design is the result of a talk with the art teacher at school.

* * *

TRAINING AID FOR INDUSTRIAL FIRE FIGHTERS

Personnel who make up the fire fighting forces in Conn. State Institutions are subject to frequent turn-over. In order to simplify instructing new men in fire fighting, we recently reorganized equipment carried on our pumper. Various Y's, nozzles, etc., were grouped according to size, and adapters were mounted close to the hose or fitting to which they would be attached. As a further reminder, we stenciled in red colored letters the places where the adapters would be used such as, "H" for hydrant, "P" for Pumper, "H.S." for hard suction, etc.—Chief Sydney R. Dobbs, Fairfield State Hospital, Newtown, Conn.

* * *

TIP FOR HOSE CHANGING

In changing wet hose on a pumper or hose wagon having a divided hose body, it is advisable to change only half the hose bed at a time, to permit faster response if called out.

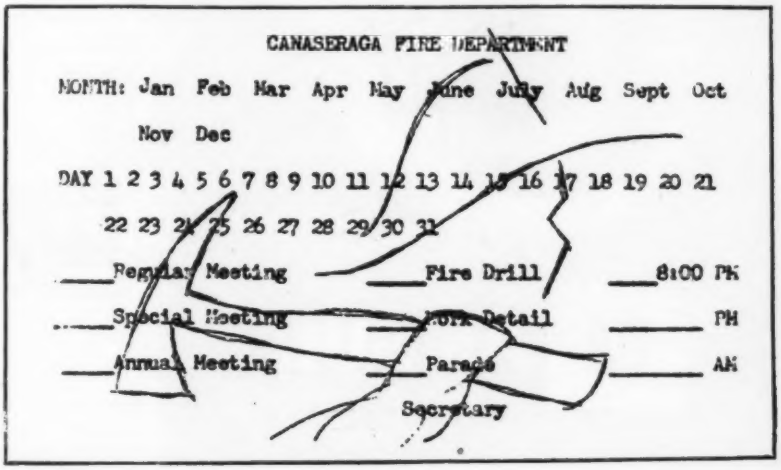
Kink Chaser

* * *

ENGLAND HAS THE RIGHT IDEA?

In England the Law says: "instructions as to the treatment of persons suffering from electric shock shall be affixed in all premises where electrical energy is generated, transformed, or used above low pressure—and in such premises, or classes of premises, in which electricity is generated, transformed, or used at low pressure, as the Secretary of State may direct."

To help the law along, "shock cards" 22"x13½" may be had, which detail the treatment prescribed for treatment of electric shock, and which can be "affixed in all premises."


CANASERAGA FIRE DEPARTMENT
MONTH: Jan Feb Mar Apr May June July Aug Sept Oct
Nov Dec
DAY 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31
Regular Meeting
Fire Drill
8:00 PM
Special Meeting
Work Detail
PM
Annual Meeting
Parade
AM
Secretary

FASTER

MORE EFFECTIVE... MORE DEPENDABLE

FIRE-STOPPING POWER

MODEL 20-B

ANSUL
Chemical Company
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

ANSUL

FIRE EXTINGUISHING EQUIPMENT

FASTER . . . A short, quick downward motion of the puncture lever pressurizes the extinguisher and it is ready for instant use.

MORE EFFECTIVE . . . Even the inexperienced operator gets near-expert results because of the ease of operation and handling. In addition ANSUL *"PLUS-FIFTY"* Dry Chemical has greater fire-killing power.

MORE DEPENDABLE . . . Exclusive ANSUL-ENGINEERED design features include water-tight and corrosion-resistant construction, easy, on-the-spot recharge without special tools and other exclusive Ansul developments which insure greater dependability.

FIRE-STOPPING POWER . . . ANSUL FIRE EXTINGUISHERS have the highest ratings for fire-stopping power ever awarded any type of class B and C fire extinguishing equipment.

Send for File No. B-205. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

ANSUL

PROVIDES THE MOST COMPLETE LINE OF DRY CHEMICAL

FIRE EXTINGUISHING EQUIPMENT

HAND PORTABLES

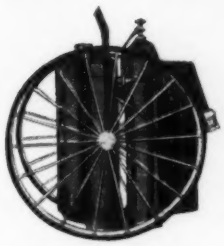
MODEL 4-C

MODEL 20-B

MODEL 30-B

NEW WHEELED PORTABLES

MODEL 150-B



MODEL 350-B

In Ansul's complete line of Fire Extinguishing Equipment there is a model of just the right size to adequately protect nearly every type and area of class B and C fire hazards in, or around, your plant. And, more important, even the largest capacity wheeled portable and stationary equipment by Ansul, is designed for quick, easy, one-man operation.

Ansul Fire Extinguishers are designed for maximum effectiveness even when used by inexperienced employees. They are easy to operate and can be quickly recharged "on-the-spot." No special tools are required for recharging, inspection or maintenance. In addition, all Ansul Equipment is water-tight and corrosion-resistant for longer, trouble-free service.

TRUCK MOUNTS, TRAILERS AND FIRE TRUCKS

MODEL J1-340

MODEL S-2000-B

PIPED SYSTEM

STATIONARY EXTINGUISHERS AND PIPED SYSTEMS

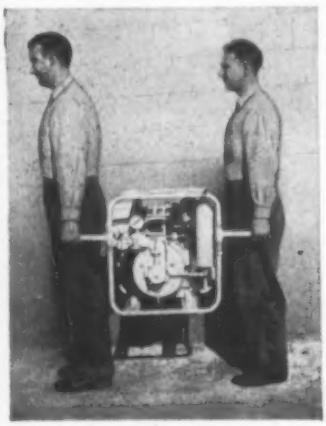
ANSUL
Chemical Company
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES

HALE Type FZZ

Fine for Re-laying to Major Pumper . . .

Easily Carried by 2 Men



Chief Leon Arnold of Newellton, La., Writes . . .

We have received from you your portale Pump, Type FZZ, which we are thoroughly satisfied with. We have only had to use it once since our purchase in September of last year, but it did a big pump job for 1½ hours through a 300-ft. line of 2½-inch hose branching off in a "Y" to two 1½-inch lines, 150 ft. each.

We carry this unit on our 500-gallon pumper to use in places where we cannot get near enough to water. Two men can easily carry it any place.

We recommend the Hale FZZ Portable Pump for any Fire Department.

Below—FZZ relaying from pond to Major Pumper.

The Hale Type FZZ portable fire pumping unit pictured at top can be easily carried by two men to source of water which truck cannot reach, for refilling booster tank or for fighting fire direct. Unit is also available mounted on two truck-type wheels or on rubber-cushioned steel channels.

The unit can be mounted on virtually any apparatus, making it possible to fight fire while apparatus is in motion, using booster tank for source of water.

Capacity of FZZ is 60 G.P.M. at 90 lbs. pressure; 150 G.P.M. at 30 lbs. pressure. Provides two capable fire streams through 1½-inch hose lines, using ½-inch nozzles. **Note:** Discharge Adapter can be supplied for use with 2½-inch hose.

Ask for demonstration; no Obligation.

Write today for FZZ Folder to:

HALE FIRE PUMP COMPANY

CONSHOHOCKEN, PA.

Fire Pumps in All Standard Capacities

Ventilation

(*Continued from page* 132)

diately available personnel. Speed is essential in most ventilation. Top level venting may call for complicated or extensive ladder work, or reaching the roof of the involved building through adjoining structures, or via fire escape or enclosed stairway. Few first-due companies today roll in with sufficient crews to attempt to employ several avenues of approach to the upper levels, where overhead venting is indicated. It is seldom that initially there are more than two or three laddermen (who customarily are responsible for coming up) available. In fact, in many of our larger cities today, short ladder crews frequently leave but one or two men at most, to get above the fire to begin opening up.

It is true that a single man, with axe or claw or hook, may be able to effect some sort of opening or openings that will have immediate effect in relieving the building interior of accumulated hot gases and smoke, and therefore permit lines to be advanced, and where necessary, search for victims. But every officer knows that the ventilation job to be effective should have more men than are normally immediately available. It is about all a ladder crew can do today to ladder a building without attempting at the same time to get men to the roof or upper floors for venting and provide other personnel to open up for engine men at other points.

Of course engine and hosemen are expected to be able to perform certain forcible entry, but where these crews also are shorthanded, as is the case today, it is about all a "full" crew can do to advance a 2½-inch line into a building and up a stairway, let alone perform forcible entry in the smoke and heat, even if they have their hands free to carry the necessary tools.

Effective ventilation, we have said, calls for coordination between ladder and engine crews. Coordination is difficult where one or both crews are short of personnel. The need to send a hoseman back for a tool, in the absence of a ladderman who might have that necessary facility but who is engaged elsewhere, may cause a serious delay in advancing lines and hitting the fire. Or the necessity of detailing a ladderman to "light up" on a hose line may delay, if not cripple, ventilating operations.

The first arriving officer, upon whom rests the responsibility for immediate action in ventilating, must include in his size-up consideration and evaluation of the total force immediately available for doing the ventilating job. And if there is any doubt in his mind about personnel or other facilities there should be no delay in summoning additional help.

With Our Readers

(*Continued from page* 139)

That, as far as I am concerned, is THE "man bites dog story" of the year, for in 99 publications out of 100, it seems to be standard operating procedure to blame the hapless printer for *all* the mistakes. What an honest editorial policy you must have!

Most cordially
LUCIEN R. GREIF
Thornwood, N. Y.

THE Chief SAYS

Until I ran across the January issue of The National Magazine, I never could understand why advertising artists always show a fire station dog as being a Dalmatian — that spotted breed, you know. Only kind we've ever had around here has been mongrels. But according to the magazine, the Dalmatian was once the English coach dog, trained to go with the horse-drawn coaches of the wealthy and guard the stables. Seems they took up the same duties in America, and were introduced to New York City's Hook and Ladder Company One around 1870 by the Vanderbilts. They were right at home around the horses and wheeled vehicles, and stayed the number one mascot when fire apparatus became motorized. Today, there are about 250 Dalmatians in New York City firehouses alone, so steady and dependable is the breed. Which reminds me . . . when it comes to fire fighting equipment, there's no more dependable "breed" anywhere than those fine BOARDMAN-Built fire fighters—long-lasting, efficient pumpers and tankers that are engineered the way you and I would do it ourselves. Take my advice and send for BOARDMAN's fire truck literature right away.

I never will forget the time a young fellow's jalopy caught fire two blocks from our station, and he just drove it down here and parked on the driveway so we could put out the blaze. Then there was that embarrassing thing that happened up at Spokane, Washington. Seems there was a Fire Prevention Week float parked in front of the firehouse, and the blamed thing caught fire right there. Well, at least the fire was handy in both of these cases. And since that's a rare condition, I'd recommend getting BOARDMAN-Built pumpers and tankers into service in your department as fast as you can. They're built for dependability, compactness and speed; and they're mounted on your choice of commercial chassis for economy. Investigate BOARDMAN-Built fire fighters real soon.

THE BOARDMAN CO.

P. O. Box 1152

Oklahoma City, Okla.

FALSE ALARMS

"I thought it was getting warmer than I predicted for today!"

"Were there any powder marks on the body of your dead husband?" the coroner asked.

"Certainly, there were powder marks," replied the widow. "That's why I shot him!"

Sermon to Remember

A wealthy farmer decided to go to church on Sunday. After the services he approached the preacher with much enthusiasm.

"Reverend, that was a damn good sermon you gave, damned good."

"I'm satisfied that you liked it, but why use such terms in expressing yourself?"

"I can't help it, Reverend, I still think it was a damned good sermon. As a matter of fact, I was so impressed, I put a hundred dollar bill in the collection plate."

"The hell you did."

License plate on a hearse in Connecticut: U2. . . .

Backfired

A very mean man went into a glassware shop in search of a gift for a friend. After spending some time looking at many articles, all of which were too expensive, he at last saw a vase which was broken in several pieces. He inquired about the price and, finding he could have the vase for practically nothing, he decided to have it sent to his friend, hoping he would think it had been broken in transit!

Accordingly he asked the assistant to pack it and dispatch it. A few days later, he received the following acknowledgment: "Thanks for the vase. So thoughtful of you to wrap each piece separately."

It was one of those fancy dress dinner parties. When the hostess finished playing the piano there was still an interval of waiting. In the embarrassing silence, she turned to one of her guests, and asked:

"Mr. Rinchturner, would you care for a sonata before dinner?"

The guest gave a start of surprise and pleasure. "Why, yes, thank you! I had a couple on my way here, but I sure could stand another."

Lonesome Blonde: "Come on over, honey. Nobody's going to be home tonight. Father is going out."

Stupid Boy Friend: "How about your mother?"

Lonesome Blonde: "She's going out too."

Stupid B. F.: "And your brother?"

Lonesome Blonde: "He'll be out too."

Ole Stupe: "Well, no use comin' over, then. No one to talk to."

Odd Ode

This is the tale of Frederick Worms
Whose parents weren't on speaking terms.
When Freddy wrote to Santa Claus
He wrote in duplicate because
One went to Dad and one to Mum.
Each asked for some Plutonium.
Now Frederick's father and his mother
Without consulting one another
Each bought a lump of largish size
Intending it for a surprise.
They met in Frederick's stocking and
Laid waste some ten square miles of land.
Learn from this tale of nuclear fission
Not to mix science with superstition.
—Quoted from Chemistry & Industry

Some men think twice before leaving their wives for an evening. First they think up an excuse for going out, then a reason why she can't go too.

"We must have missed the lingerie show, might as well get everyone out!"

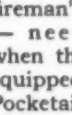
At New Haven Fire School, Battalion Chief and 'first-in' men use Pocketaire.

Sure Escape for 'First-In' Men with POCKETAIRE

means you can concentrate on fire attack.

"We like Pocketaire because it goes on the fireman instead of on the truck," say Chief Collins of New Haven, Conn., and Battalion Chief Flannigan, head of the famous New Haven Fire School, where Pocketaire was tested in 1953.

Smoke and fumes — the fireman's deadliest enemies — need not be feared when the 'first-in' men are equipped with midget-sized Pocketaire — four pounds of oxygen breathing apparatus that gives time for investigation and ventilation plus a second cylinder which gives 5 minutes for escape.



POCKETAIRE is *first* to combine SAFETY with

- **light-weight**
- **small size**
- **convenience**
- **low cost**

(Send today for our new booklet)

THE CYCLE-FLO COMPANY

108 Gulf St., Milford, Conn.

Please send me your booklet on Pocketaire Breathing Equipment.

Name _____

Address _____

_____

A few distributorships are still available. Write for details.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

K-9 Alarm System Serves New Customer

Lincoln, Neb., firemen, called to the Wayne Hauck home, brought a fire under control before serious damage was done to the structure.

The loss would have been heavier but for the alarm given by Spookie, 10-year-old Chow belonging to a neighbor W. R. Ross. Spookie called attention to the fire by jumping and scratching on the door of his master's home. When Ross went to investigate in response to the dog's insistant actions, he saw flames shooting from the Hauck home and turned in the alarm.

There was no one home when the fire broke out. Mr. Hauck estimated the damage at $5,000 but was sure it would have been much higher but for Spookie the "K-9 Alarm System."

Thanks JOE L. PLUTA,
Insp., Omaha Fire Dept.

* * *

Engine 153, NYFD, Institutes "Delivery Service"

Firemen are used to meeting emergencies, but not always the kind presented them by Mr. and Mrs. Donald Beyers of New Dorp Lane, Staten Island, N. Y.

The married couple, expecting a child momentarily, left their Staten Island home at 3: P.M. in a race to get to the Staten Island Hospital before the stork did. But by the time they had reached Stapleton on the Island, they decided they had gone far enough—it was apparent they couldn't win against stork.

There wasn't time to hunt up a doctor —but there was just time to reach Engine 153 on Broad Street, Stapleton, and a crew that was ready for the crisis.

Fireman Joseph Viggiano, married, but not yet a father himself, supervised the "operations emergency," with the assistance of "all hands."

Mother and child, a husky girl, were later taken to the Hospital, where they were reported doing well. "Just routine" said one of the Brothers, as he opened up the Journal to enter the episode.

* * *

Hot Off the Tape

Over in Fayette, Mo., last fall, the sparrows and starlings were getting so thick around the courthouse that people stayed away in droves. Firemen tried to hose them from the trees. The birds loved the water and flocked to the area in even greater numbers. "Anyway," says the local wit, "the sidewalks were cleaner for a while." (Thanks Irving Johnson) . . . Raymond H. Cooke lives pretty far out in the country from Chepachet, R. I., on Douglas Hook Road. He used to worry about what would happen if his house caught fire. It would take Harmony, R. I., firemen, 15 minutes he figured to get their rig to his property. So he decided to do something about it. And he did. He bought the Harmony department's truck himself and took it home. The company was getting a new pumper anyway—and Cooke got in his bid of $101.01 (Thanks Chandler Brainard) . . . A volunteer fireman with the E. Pennsauken Fire Company of Pennsauken Township, Pa., was held for the grand jury in December in connection with the death of a citizen who was struck by the fireman's automobile in November. The volunteer testified he was en route to a grass fire when the man walked into his car . . . Hartford, Conn., is said by the press to apparently be first in the country to require fire apparatus to halt for red lights and stop signs . . . This 'un from East Granby, Conn., got a lot of press play: "Grass around tobacco farmer Walter S. Rollins' barn was becoming a fire hazard, so he tried to burn it away as a preventive measure. The barn burned down . . . Fire Commissioner Jacob Grumet, who is retiring as head of the New York Fire Department, received an unusual letter from a Philadelphia woman, who confessed that several years ago she turned in a false alarm in New York. She enclosed a check for $100 to cover the damages. The commissioner turned the money over to the department's welfare fund . . . In Chicago, a 50-year-old woman died of burns on Jan. 4th, when an oxygen tent exploded while she was smoking in it at Michael Reese Hospital, that city. She had been taken to the hospital suffering from pneumonia. She was placed in an oxygen tent and warned repeatedly against smoking. However, she lit a cigarette—her last . . . In Port Chester, N. Y., 28 workmen, warned by bursting steam pipes, fled the 50-year-old dye house of the Rainbow Finishing Corp. seconds before the roof caved in. An official set the damage at $300,000. No fire but Port Chester firemen stood by until it was determined there were no victims—and no further threat of fire . . . Sixty mental patients were removed temporarily from a ward when a small fire broke out in the Manhattan State Hospital on Wards Island, the East River, Jan. 6th, last. The fire in a clothing locker, was quickly extinguished. Patients in the ward above, filed out in orderly fashion. There was no panic, no excitement. It's nice to have evidence of how drilling and good firemanship can prevent a catastrophe . . . Last fall, the mayor of Haverhill, Mass., said he would have beds removed from all city's fire stations as soon as the firemen's 48-hour week went into effect. Mayor is quoted as saying "The firemen won't be in the fire station long enough to sleep so what do they want the beds for? They will have plently of free time on their hands and can get their sleep at home."

* * *

Rubbernecks Get Free Tickets— To See Judge

Another instance of where thoughtless sightseers jammed up to impede fire fighters has come to light, as has the measures taken by the department in question to correct the abuse.

The fire fighters of Breckenridge Hills, not far from St. Louis, Mo., were called to put out a fire in a home on Edmundson Road. With the firemen, and competing to be first at the scene, were a few score motorists, not to speak of those who walked and ran afoot—all

attracted by the flames from a burning paint shed.

Fire Chief Robert L. Donovan, who had the fire, said the traffic tie-up, which made it difficult for the second fire truck to enter the block, might have caused a catastrophe. It was necessary to move several machines before all the Brothers could get into action. Meanwhile the fire threatened several frame structures in the block.

In an effort to teach the thoughtless spectators a lesson, by orders of the Chief Donovan, police officers were stationed at both ends of the block. Motorists were not allowed to drive away until they had been presented tickets for "obstructing firemen on duty."

THANKS GEORGE BEAUMONT

* * *

Firemen "Booby-Trapped" in Burning Apartment

Fire fighters are familiar with hazards of all kinds—even including the X-curricular job of serving as "mid-wife," as related above, but sometimes they have to face risks not envisaged by even the most comprehensive R. & R. Like what happened to two Springfield, Mass., firemen last Dec. 31st.

The men were Maurice Welsh and Maurice Griffin, and they were ambushed by a booby-trapped shot gun, when they entered a burning apartment house to operate on the blaze.

About twenty pellets struck Walsh in the left foot and others punctured Griffin's right foot. Both men were rushed to the hospital where their injuries, fortunately, were said to be not serious.

In Springfield, the setting of such devices as a spring gun is illegal and, after the incident, police sought Charles Hicks, owner of the building and occupant of the second floor apartment in which the shotgun was installed. It rested on a foot locker, and a cord connected its trigger with the door handle. When the two fire fighters opened the door, the weapon was discharged.

The two smoke eaters are considered lucky that they did not suffer a worse fate in the blast. Last summer, Mr. Hicks, forgetting about his own trap, intended for intruders, was himself the victim. He was blasted in the knee and for a time required crutches. At the time of the second incident, he was still walking with a cane.

Seems there oughta be a moral somewhere in this.

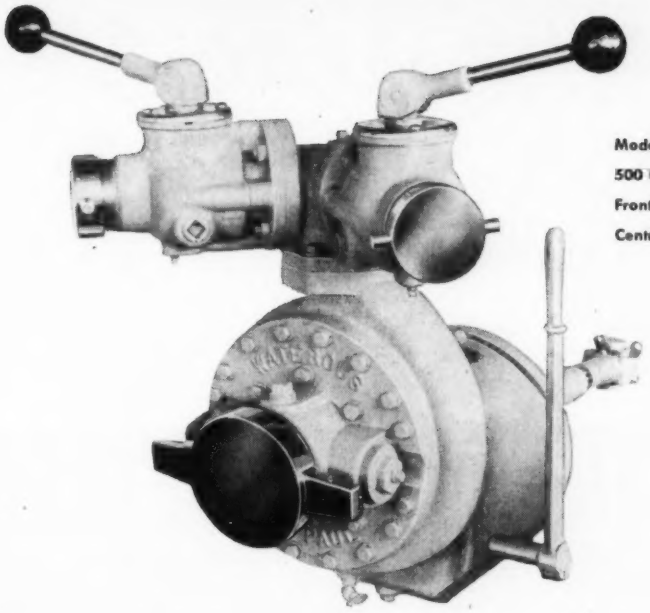
* * *

Butane Ends Fight—Jails Two Salesmen

There's more than one way to stop a fight, but one way not to do it is the method employed by two Coast salesmen, who assertedly used a butane tank, and flame thrower, to wind up a "heated" traffic argument with three youths.

The salesmen, who shall remain nameless, encountered the car with the three youths, while they were going down the highway. The former, the youths claimed, were driving recklessly. The three youths reportedly "admonished" the salesmen, whereupon a terrific argument ensued, in the course of which the elder of the two brought his flaming butane tank into operation and that wound up the battle. It also wound up the car in which the younger group was riding. That took fire and was completely gutted.

The salesmen were arrested after the youths fled the scene.



Model CF-3
500 GPM
Front-mounted
Centrifugal Pump

Waterous announces new front-mounted pump

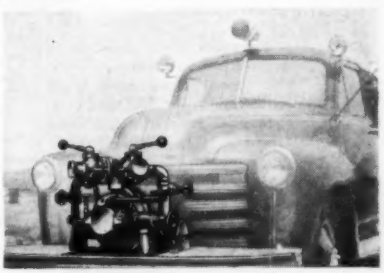
● Here's a revolutionary front-mounted fire pump . . . the WATEROUS Model CF-3.

This new pump features an "over-center" single plate, dry, automotive type clutch. This simple, easy-to-operate clutch provides *positive* engagement and disengagement *at any speed*, and virtually ends the need for adjustment.

From suction to discharge, the compact CF-3 maintains the same high quality of materials and workmanship for which WATEROUS pumps are famous. Grease-lubricated anti-friction ball bearings, completely protected from sand and water, are used throughout. The bronze impeller, hydraulically and mechanically balanced, is mounted on a stainless steel shaft. Gears are helically cut from alloy steel, hardened and ground.

Dependable cold weather operation is assured by the circulation of engine coolant through an integral pump-heating jacket.

Two 2½" hose lines may be separately controlled by two WATEROUS ball-type discharge valves which lock positively in any position. These valves



are the same as those found on the largest midship-mounted WATEROUS pumps.

The CF-3 is rated 500 GPM "Class A" or 600 GPM "Class B" with popularly priced commercial chassis.

For further information on the CF-3 or the complete line of WATEROUS fire pumps, write WATEROUS COMPANY, 40 Fillmore Ave., St. Paul, Minn.

Waterous
DEPENDABLE PUMPS
SINCE 1886

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of January, 1954.

Month Ending January 31, 1954

Sheffield, Ala.—Reynolds Alloy plant heavily damaged. Spark from welder's torch.
Fort Defiance, Ariz.—Power house of Navajos Tribal saw mill, 12 miles northwest, destroyed. Explosion.
Phoenix, Ariz.—Northeast Phoenix Shopping Center, including five business establishments.
Castro Valley, Cal.—Alex Maggach electrical shop, destroyed.
Eureka, Cal.—Club Humboldt, formerly the Eureka Golf and Country Club, destroyed.
Gilroy, Cal.—Barn of Jim O'Connel Ranch destroyed.
Los Angeles, Cal.—Irving Roth Furniture Co. store destroyed.
Los Angeles, Cal.—Warehouse of American Floor Covering Co. destroyed.
Redlands, Cal.—Camp O-Ongo, San Bernadino Mountain resort, destroyed.
Sacramento, Cal.—Stored sugar and canned foods in Haslett Warehouse Co. storage building, destroyed.
San Diego, Cal.—Wellman Peck & Co. grocery warehouse destroyed.
San Francisco, Cal.—Italian-American Paste Co. damaged.
Denver, Colo.—R & S Warehouse and L & R Furniture and Cabinet Works damaged.
Ansonia, Conn.—Three Saints Russian Orthodox Church damaged. Explosion in heating plant.
Beacon Falls, Conn.—Building on Main street, occupied by P & M Market, Beacon Falls department store and two apartments, destroyed.
Cheshire, Conn.—Building in center of town occupied by Priscilla Shop, a gift store; Heath's Soda Shop and Platt's Food Store; a department store; bakery; liquor store; shoe repair shop; dry cleaner's shop; appliance store and jewelry store, damaged. Overheated furnace.
Willimantic, Conn.—C. C. Lounsbury's garage destroyed.
Ogletown, Dela.—Barn at Our Lady of Grace Home, destroyed.
Washington, D. C.—Grande Valley Products, Inc., damaged. Electric heater in candling room.
Miami Springs, Fla.—Miami Graded Ray Co. plant, damaged.
Ocala, Fla.—Marion Rendering Co.'s building, four miles southwest, destroyed.
Elberton, Ga.—Harmony Granite Co. destroyed.
Twin Falls, Ida.—Twin Falls Bakery and show store, destroyed. Gas explosion.
Belleville, Ill.—Acme Auto Parts, Inc., building destroyed.
Chicago, Ill.—Women's clothing store at 3212 Lincoln avenue, destroyed.
Chicago, Ill.—Industrial building at 216-230 N. Jefferson, housing machinery, printing and upholstery firms, destroyed.
Chicago, Ill.—Del Farms Foods, supermarket, destroyed.
Chicago, Ill.—Six buildings used for lumber and hardware storage at Edward Hines Lumber Co. yard, destroyed.
Mt. Carroll, Ill.—John Frank funeral home and furniture store in Carroll County, destroyed.
Peoria, Ill.—Maslow Cooperage Corp. factory destroyed.
Peoria, Ill.—Kaufman Furniture Co. building destroyed.
Springfield, Ill.—Libert Cleaners and a showroom of Madison Furniture Co. damaged.
Nashville, Ind.—Three adjoining buildings, occupied by Loren Moore grocery, Kirk Skinner poolroom and Ralph Arnold barber shop, destroyed.
Paoli, Ind.—Farmers Hatchery & Supply Co., on U. S. 150, destroyed.
South Bend, Ind.—Myers Building in downtown section destroyed.
Council Bluffs, Ia.—World Radio Laboratories, one of the nation's largest manufacturers of radio parts, and apartments above, destroyed.
Hawkeye, Ia.—Triple L Garage destroyed. Oil stove.
Mount Vernon, Ia—R. A. Busenbark tavern destroyed. Adjoining Iowa Electric Light and Power Co. and Lumas Produce Co. damaged. Oil burner exploded.
Newton, Ia.—Buildings occupied by Western Auto Store, Elks Club, plumbing firm, cleaning establishment, furniture store, two diners, two apartments and several offices, destroyed.
Odebolt, Ia.—Building housing Gamble store, Cut Rate Market, Wandrip Appliance Store and Keller's barber shop, destroyed.
Shenandoah, Ia.—Building housing supermarket and Reed's service station at junction of Highways 59 and 2, destroyed.
Shawnee, Kans.—Meyer Lumber Co. yards and office destroyed.
Great Bend, Kans.—Hangar and 27 private planes at Municipal Airport, destroyed.
Campton, Ky.—Rex Centers General Store in Wolfe County, destroyed. Gas explosion.
Henderson, Ky.—Building housing Willett Maytag Co., retail outlet for washing machines, television sets and other items, destroyed; adjoining building of Moss-Sommers Furniture Co. damaged.
Louisville, Ky.—Electric Blueprint Co. damaged.
Paducah, Ky.—Douglas House, a furniture store, just outside the city limits, destroyed. Defective gas heater.
Wheelwright, Ky.—The No. 1 Commissary and General Appliance building of Inland Steel Corp. in this southern Floyd County mining town, destroyed. Short circuit.
Caribou, Me.—Vaughan House Hotel destroyed.
Caribou, Me.—Catholic Church destroyed.
East Boothbay, Me.—Mine-sweeper building at Hodgdon Bros. shipyard, destroyed.
Portland, Me.—Pocahontas Fuel Co.'s 300-foot coal wharf, destroyed.
Revere, Mass.—Residential business block of five buildings in Orr Square, including furniture store, restaurant, barber shop, real estate office and taxicab stand, damaged.
Waltham, Mass.—George J. Barker Lumber Co. damaged.
Bloomfield Hills, Mich.—Dwelling of Stanley R. Hood damaged. Overheated chimney.
Croswell, Mich.—Croswell Milling Co. plant damaged.
Detroit, Mich.—Holbrook Market destroyed. Rubbish fire.
Jackson, Mich.—Barn at Crenshaw Livestock Sales, destroyed.
Lansing, Mich.—Federal Drop Forge Co. plant destroyed.
Ludington, Mich.—Autopulse Corp. plant damaged. Defective wiring.
Muskegon, Mich.—Home Furniture Co. store which occupied about three-quarters of a downtown block, destroyed.
Owosso, Mich.—Dairy barn and tenant house on Cameron Carruthers farm, destroyed. Coal stove.
Pontiac, Mich.—Silver Lite Co. aluminum storm window plant, Southfield Township, destroyed.

Fight Fires Faster!

with the DUAL FIRE FIGHTER

DIRECT PUMPING

AS A BOOSTER

Use the Dual Fire Fighter direct when truck pumper is unavailable.

Prevents costly damage to valuable equipment . . . extends your pumper truck range as much as 300 feet . . . reaches otherwise inaccessible water sources.

When fire strikes — prompt, sure action is an urgent necessity, and water is often inaccessible to the truck pumper because of trees, fences or other obstacles.

Two men carry the 162-pound Gorman-Rupp Dual Fire Fighter. Fighting a fire directly, or filling a vital need as a booster pump, the Gorman-Rupp Dual Fire Fighter starts throwing water in less than one minute.

Write for Bulletin No. 9-FD-11

GORMAN-RUPP PUMPS

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

Royal Oak, Mich.—Almost an entire downtown city block destroyed.
Rudyard, Mich.—McDowell Implement Co. building destroyed.
Ypsilanti, Mich.—Ypsilanti Daily Press, publishing plant, destroyed.
Brainerd, Minn.—Barn on Staples Co-Operative Assn. farm, three miles south, destroyed.
Duluth, Minn.—Patty-Cake Shop, Allen Shoe Store and Dworshak Studio, damaged.
Hendricks, Minn.—Hendricks Bakery-Cafe and Fairway Store in Lincoln County, destroyed.
North St. Paul, Minn.—Building housing Reliable Roofing Co. and apartments; adjoining G. P. Sandberg mortuary, destroyed.
Stillwater, Minn.—Sam Elias tailor shop destroyed.
Eupora, Miss.—Tom Ross Motor Co. destroyed.
Bragg City, Mo.—Gymnasium and new classroom annex of Bragg City High School destroyed.
Des Peres, Mo.—Dwelling of William B. Quinn, damaged.
Festus, Mo.—Mrs. George Koestler's Milling Co.
Kansas City, Mo.—St. George's Episcopal Church destroyed.
Trenton, Mo.—Holmes Tractor and Machine works destroyed.
Valley Park, Mo.—The Valley Bowl, a bowling alleys project, and an adjoining boathouse, destroyed.
Butte, Mont.—Butte YMCA bowling alleys destroyed. Overheated heater.
Missoula, Mont.—Johnson Flying Service hangar destroyed.
Elko, Nev.—Furniture store, meat market, automobile machine shop, plate glass firm and a neon sign company in business district, destroyed.
Woodsville, N. H.—Odd Fellows Building, one ow two office blocks in town, a garage owned by Harold O. Taylor, several vehicles, two houses and a barn, destroyed.
Delaware Township, N. J.—Building occupied by cafe and three apartments, destroyed.
Garfield, N. J.—Portion of Garfield Trust Co. destroyed.
Long Branch, N. J.—Building in West End section, occupied by Pat Pace's Tavern, Driftwood Gift Shop, Dimitri's Parlor, real estate office of Rufus Parson, Ann Stewart's Dress Shop and Roy's Sandwich Shop, destroyed.
Newark, N. J.—Zarro's Funeral Home destroyed.
Newark, N. J.—W. Wilderotter & Co.'s department store, destroyed.
Orange, N. J.—Five downtown stores, including McCrory's five and ten cent store, destroyed.
Passaic, N. J.—Building occupied by Majestic furniture store, New Jersey Auto Parts Co., Passaic Boy's Clothes Co. and Martini's furniture store, damaged.
Peapack-Gladstone, N. J.—Somerset County Road Department barns destroyed.
Perth Amboy, N. J.—Atlantic and Pacific Tea Co. supermarket destroyed.
Plainfield, N. J.—Washington School destroyed. Fire set by boys.
South River, N. J.—Building occupied by Ted Lesh, attorney; Pulowski Building & Loan Assn. and adjoining buildings occupied by confectionery store of George Szepieniec and Jackson Bakery and apartments, damaged. Toy train's sparks set off Christmas tree.
Trenton, N. J.—Office and storage garage of Parkway Concrete Co. on Buck Island in Hamilton Township, destroyed. Kerosene stove explosion.
West New York, N. J.—Two five-story apartments and store in business district, destroyed.
West New York, N. J.—Speed Auto Supply Co. store destroyed.
Adams Center, N. Y.—Building of Northern Feed and Coal Co. destroyed.
Astoria, N. Y.—Offices of Dr. William Streim, Herbert Oil Co., Walters Construction Co., a silverware shop and law offices of Donald and Louis Locke, destroyed; Dilbert supermarket, Welcome Fruit Market and Children's Hour, damaged.
Brooklyn, N. Y.—Warehouse owned by New York Dock Co. and leased to Mulkor Warehouse Co., containing thousands of television sets owned by CBS-Columbia, destroyed.
Genoa, N. Y.—Barn and nursing home owned by Edward Murray, destroyed.
Ithaca, N. Y.—Business and apartment building including Dean Phipps Auto Accessory store damaged.
Lake George, N. Y.—Birdie and Dave's tavern and Herman Murray's Playland, destroyed. Liquor store and beauty parlor damaged.
Lido Beach, L. I., N. Y.—Vacant summer home of Richard Flannagan, destroyed. Faulty electric generator and overheated wires.
Monticello, N. Y.—Business building housing a drug store, dress shop and meat market, damaged.
Newburgh, N. Y.—Building occupied by Goldman & Son Paper Products Distributing Co. destroyed and several surrounding establishments, damaged.
New York, N. Y.—St. Nicholas Albanian Orthodox Church damaged.
New York, N. Y.—Ber-Ben Clothes and Castro Convertible, damaged.

12 reasons why Scott AIR-PAK is your best breathing equipment buy!

1. Ready for use in less than one minute, just turn on the valve and it's ready to go.
2. Clear visibility, cool air prevents fogging.
3. Simple to use. No practice or complicated training. Anyone can use the Air-Pak with complete confidence.
4. Fresh, cool AIR — not oxygen, for 100% protection in all breathing hazards, even explosive petroleum vapors.
5. Free and easy breathing under all conditions. No breathing restraint even during extreme exertion.
6. Triple safe regulator design proven by hundreds of thousands of hours service.
7. Positive, constant check of available air supply with dependable gage. No timer, no guesswork.
8. Full-vision face mask with diaphragm exhalation valve permits conversation.
9. The AIR-PAK is all-purpose equipment, not just rescue apparatus.
10. Economical. Operates for as little as 50c per hour. There is no waste — air that is not used may be saved for next time.
11. The AIR-PAK is completely independent of surroundings — safe in any atmosphere, in any concentration. Can even be used under water!
12. Proven. Thousands in use by business, industry and the fire service.

SINCE 1932 Scott FOR SAFETY - FOR SERVICE

WRITE TODAY FOR COMPLETE INFORMATION!

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
215 ERIE STREET LANCASTER, N. Y.
Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, New York

New York, N. Y.—Bedford Stores, retail dealers in TV sets and electrical appliances, Bedford Interiors, Inc., and National Carpet Co., damaged.

New York, N. Y.—Building occupied by A & H Switchboard Mfg. Co., Alliance Shoulder Pad Co., National Wire Corp. and York Doll & Toy Manufacturing Co., damaged considerably.

Orchard Park, N. Y.—Barn on Chestnut Ridge Nurseries property, destroyed.

Roslyn, N. Y.—Engineers Country Club building destroyed.

Syracuse, N. Y.—Shadd & Wenger furniture factory destroyed.

Utica, N. Y.—Church of the Sacred Heart damaged. Incendiary.

High Point, N. C.—Spaugh Paper Co. plant destroyed.

Kinston, N. C.—Building occupied by Kinston Machine and Supply Co. and Humphrey Tire Co., severely damaged.

Leaksville, N. C.—DeHart Building housing a five and ten cent store and insurance offices, damaged.

Lenoir, N. C.—Arcade Building housing Gordon Ballew drug store, Watson's barber shop, Spainhour's department store, beauty shop and an insurance office, damaged.

Raleigh, N. C.—Lee and Barrett's Men's Clothing Store damaged.

Rockwell, N. C.—Rockwell Milling Co. flour milling plant, destroyed.

Sanford, N. C.—Brown Auto Supply, retail and wholesale company, damaged.

Shallotte, N. C.—Supermarket destroyed.

Shelby, N. C.—D. A. Beam block housing a grocery, bicycle shop, Betty Jean Beauty Shop, offices, destroyed.

Smithfield, N. C.—Buie's Motors, Inc., destroyed.

Fargo, N. D.—Meyers-Taube Co. building in downtown destroyed. Firm is wholesale distributor of electrical appliances, radio and television.

Akron, Ohio—Hangar of B. E. Goodrich Co. at Municipal Airport damaged.

Brookville, Ohio—Evangelical United Brethren Church destroyed.

Cincinnati, Ohio—Ideal Packing Co. plant damaged.

Cincinnati, Ohio—Cincinnati Dowel & Wood Products Co. destroyed. Short circuit.

Springfield, Ohio—Ripley Inc. garage destroyed.

Toledo, Ohio—Warehouse of Ottawa River Paper Co. destroyed.

Unionport, Ohio—First Christian Church damaged.

BAR-WAY COUPLINGS...

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line*. Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose, ID and OD.

BAR-WAY MFG. CO., STAMFORD, CONN.

WEST COAST REPRESENTATIVE { W. D. BIGGON, 383 Brannan Street, San Francisco 7, Calif.

Council Hill, Okla.—Local high school building together with auditorium and gymnasium, destroyed. Defective wiring.

Hugo, Okla.—Dwelling of circus man Kelly Miller, part owner of Al G. Kelly and Miller Bros. circus, destroyed.

Oklahoma City, Okla.—Dwelling of Attorney Coleman H. Hayes, damaged. Defective furnace.

Carber, Ore—Suburban farm home of Albert Schneider destroyed. Faulty oil heater.

Molalla, Ore.—Sig Gasser general store destroyed. Faulty oil stove.

Portland, Ore.—Welders Service Co. and Evergreen Equipment Co. destroyed. Cigarette.

Portland, Ore.—Dwelling of Robert S. Miller, destroyed.

Portland, Ore.—Chase Dinners Restaurant. Cigarette.

Portland, Ore.—Powder Power Tool Co. destroyed.

Portland, Ore.—Breyman Leather Co., Chown Electric Supply and General Rubber Supply, damaged.

Turner, Ore.—Burkland Bros. Lumber Co. damaged. Explosion.

Cambridge, Pa.—Barn on Christ L. Stoltzzfus farm destroyed.

Carlisle, Pa.—Grand View Hotel at old Turnpike Interchange, destroyed.

Carlisle, Pa.—Allison Memorial Methodist Church destroyed.

Jonestown, Pa.—Hess Feed Mill destroyed.

Lake Lynn, Pa.—Lake Lynn Hotel destroyed.

Lititz, Pa.—Barn on Rev. John S. Hess farm destroyed.

McKeesport, Pa.—Building in downtown section occupied by Monterey Inn, Ace Wallpaper Co., George's Food Shoppe and apartments, damaged.

Millerstown, Pa.—Factory of Precisionware, Inc., destroyed.

Pottstown, Pa.—F. W. Woolworth Co. and Royal Jewelry Co. store, destroyed.

Rochester, Pa.—Building housing restaurant, barber shop and fish market, destroyed. Adjoining furniture store and tavern in business district damaged.

Upper Darby, Pa.—Dwelling of Samuel R. Dickey, damaged.

Waynesboro, Pa.—Coal storage shed at Mont Alto State Park, damaged.

West Chester, Pa.—Welding buildings and equipment of Lenape Hydraulic Co., Route 52, six miles south, destroyed.

Dillon, S. C.—Warehouse and 1,500 bales of cotton, destroyed.

Kimball, S. D.—Building occupied by John Deere farm implement agency; Flynn's recreation parlor; barber shop; and another building whose lower floor was vacant, in business district, damaged. Acetylene gas tank explosion.

Fayetteville, Tenn.—Lincoln Loose Warehouse and Farmers Burley Warehouse, including 150,000 pounds of tobacco, destroyed.

Jackson, Tenn.—Carroll Paper, Gambles Furniture and Appliance Co. and Petty's barber shop, destroyed.

Knoxville, Tenn.—City View Baptist Church, destroyed. Defective heating plant.

Washington College, Tenn.—Building housing boys' dormitory and commercial department of Washington College Academy, destroyed.

Belleville, Tex.—First Baptist Church, dedicated only six months ago, destroyed. Heating system.

Douglass, Tex.—Service station, store and living quarters of B. P. English; feed store, service station and warehouse of S. H. Watkins, U. S. Post Office and Whitt Rosseau's pharmacy, destroyed.

Hart, Tex.—Unit of Farmers Elevator destroyed.

Dante, Va.—Tipple number 2 of Clinchfield Coal Co. damaged.

Fredericksburg, Va.—Gothic chapel of Fredericksburg Presbyterian Church damaged.

Galax, Va.—Half city block, including four stores, poolroom and residential apartments above, in midtown business district, heavily damaged.

Gate City, Va.—Winegar Building and building housing J. A. Counts Jewelry Co., Bush and Ward Restaurant, Western Auto Associates Co. store, beauty shop and barber shop, destroyed.

Ivy, Va.—Picture frame factory owned by Paul B. Victorius, destroyed.

Newport News, Va.—Four buildings on Washington avenue across from the Newport News Shipbuilding & Dry Dock Co., housing two cafeterias and a barber shop, destroyed.

Orange, Va.—Scott Chevrolet Sales, Inc., building destroyed.

Portsmouth, Va.—Lawrence Trant's Pharmacy in Kirn Building and three floors above, damaged.

Virginia Beach, Va.—Gay Manor Hotel damaged.

Bellingham, Wash.—Port of Bellingham Warehouses, fishing equipment, destroyed. Faulty light cord.

Port Angeles, Wash.—Middleton Motors destroyed.

Port Wells, Wash.—Port Wells tank farm docks destroyed. Standard Oil tanker J. N. Hannah hit pier coming in with 135 thousand barrels of oil.

Tacoma, Wash.—Broadway Square Apartments destroyed.

Bluefield, W. Va.—Barn of Leatherwood Farms, just outside the corporate limits of the city, destroyed. Faulty electric switch flashing sparks into a haymow.
Huntington, W. Va.—Clubhouse of Guyan Golf and Country Club destroyed.
Fond du Lac, Wis.—Holman furniture store, an insurance agency and tavern, damaged.
Grantsburg, Wis.—Building occupied by Grantsburg Co-op store and apartments, destroyed. Overheated chimney.
Kaukauna, Wis.—Fargo Furniture Store and Funeral Home damaged. Defective heating plant.
Kenosha, Wis.—Congress Club bar destroyed. Defective wiring.
Madison, Wis.—Business building occupied by Torgenson Bros. Garage, Ross Body Shop and Automotive Electric Sales Co. damaged. Drop cord bulb broke into spilled gasoline.
Torrington, Wyo.—Wigwam bakery destroyed.
Worland, Wyo.—Building in north edge of business section, housing veterinary clinic, Rendezvous Club, liquor store and Nelson Hardware Store, destroyed; adjoining Nelson Implement Co. damaged.
Worland, Wyo.—Roy Glen Trucking Co. destroyed.
Blairmore, Alta.—Boiler room of West Canadian Collieries' Greenhill mine, destroyed.
Edmonton, Alta.—Boiler room of Wainright Refiners and Producers, Ltd., refinery, destroyed.
Victoria, B. C.—Tractor Machine Shop of Rocky Point Arsenal, destroyed.
Victoria, B. C.—Ship building yard of Victory Machinery Depot in outer harbor, damaged.
Halifax, N. S.—Building occupied by Gordon & Keith Furniture Co., Ltd., and Singer Sewing Machine Co., destroyed.
Aurora, Ont.—Four downtown buildings including restaurant and furniture store on Main Street, destroyed.
Belleville, Ont.—Business building including Van Dusen Appliances and fish and chips shop, operated by Harvey Hunter, destroyed. Oil stove exploded.
Islington, Ont.—Warehouse and garage of Delter, Ltd., a plastics factory, destroyed.
Lindsay, Ont.—Canadian National Railways freight shed destroyed.
Ottawa, Ont.—Premises of Stubby Beverages and adjoining White Bear Rubber Co., destroyed.
Pickering, Ont.—Perry business building destroyed. A shoe store, dry cleaning establishment and eight apartments were damaged.
Sudbury, Ont.—Business block housing four stores
Toronto, Ont.—Building in downtown occupied by Morse-Pearsall, Ltd., a leather company and Anglo Traders, Ltd., a canvas goods manufacturing firm, damaged.
Windsor, Ont.—Palace Recreation Building, containing 32 bowling alleys, destroyed.
Montreal, Que.—Tudor Apartments destroyed. Coal furnace blew up.
Montreal, Que.—Brick factory of Finnie Manufacturing Co., Ltd., destroyed.
Montreal, Que.—Downtown block occupied by Taylor Advertising Ltd. and Lafleur hardware store, destroyed.
Montreal, Que.—Dwelling of Michel Beaudin, in suburban Ville Jacques Cartier; interior of building housing English Food Specialties Shop and office of French consulate in heart of downtown area; Ye Olde English Cheese Shop and building occupied by Montreal Scale Works Regd. and apartments, destroyed.
Quebec, Que.—Stable and storage house at nearby St. Michel Archangel Mental Hospital, destroyed.
St. Mathias Rouville, Que.—Three dwellings and two vacant summer camps of H. St. Pierre, J. Morin, Charles Bellerive, Lionel Roy, J. Bellavance and Mrs. R. Lefebre, destroyed.
St. Urbain, Que.—Roman Catholic Church destroyed.
Ste. Cecile de Masham, Que.—Lumber mill owned by Paul and Gustave Dufour, wooden building which housed grist mill, planing mill, sawmill, machine shop and furniture factory, destroyed.
Sherbrooke, Que.—Castonguay garage and repair shop destroyed. Welding torch.

Fireman Gives 100 Pints Blood

Michael J. Ennis, 46-year-old driver of Philadelphia's Fire Rescue 4 donated his 10th pint of blood Jan. 21st last at Memorial Hospital, Roxborough. "I don't know whether it's psychological or whether I just have an excess of blood," he said, "I just know it makes me feel good to give blood."

He doesn't always know just where his donations go. Sometimes it's to the blood bank; sometimes to fellow-members of the fire dpeartment and sometimes to "just folks" who needed it.

Friends

We all have our friends — they surround us in our daily life — they are with us during our happy moments — and there beside us in time of need.

Our assistant sales manager, James (Jimmy) Kay was killed this past month in an automobile accident in Exeter, New Hampshire while on a hunting trip. Jimmy had a host of friends in the Fire and Police Equipment field — everyone knew him for his explosive enthusiasm and winning personality.

Jimmy possessed an unusual ability to leave you almost electrified with his overpowering drive and vigor after talking with you for only a few minutes. Jimmy's popularity and keen sales approach resulted in remarkable advances in the fire and police badge field under his guidance.

We know his many friends throughout the field will miss him. We here at Blackinton find it hard to believe, because Jimmy was the kind of a friend it will be hard to forget.

New faces and new friends must now carry on. Our badge department will be headed by Joseph (Joe) Ferland. Joe has already made numerous friends for Blackinton and we know he will continue to win many more friends and gain your confidence in helping you with all of your badge requirements.

Old friends are not to be forgotten but new friends must take their places in the rush of life.

V. H. BLACKINTON & CO., INC.
ATTLEBORO FALLS, MASSACHUSETTS

The finest selection of Police and Fire badges in the Country

World Wide Fire News

By Roi B. Woolley

There's Joy in Alexandria, Once More

The chances of Alexandria, Va., getting back an old fire pumper George Washington once presented to one of Alexandria's fire companies seemed assured, thus ending the hassle that started when some misguided vamp instituted a movement to have the pesky No'thern firefighters return a pumper relic from the Fireman's Home at Hudson, N. Y., which he claimed rightfully belonged to Alexandria, but which actually was not the Alexandria engine.

The Yankee pumper not being forthcoming, efforts were directed nearer to home, in Baltimore, where has reposed the 189-year-old engine, which also is claimed by the Virginia vamps.

Upon due solicitation, the Baltimore Fire Board has agreed to lend the squatty, tubby but historic 'gine to Alexandria officials for as long as they keep it on display in Friendship Firehouse, soon to be dedicated as a national shrine.

Baltimore acquired the engine from a Frederick junk dealer back in 1849, and it has been on display in the Washington Monument, Baltimore, ever since.

* * *

2-Year Coal Pile Fire Proves Problem

Fire, smoldering for over two years in a 30,000-ton coal pile at the plant of the Manitowoc Portland Cement Company, Manitowoc, Wis., has proved a perplexing problem in extinguishment. Its fumes have become a menace to the health of residents, authorities say, and irate citizens are demanding something be done about it.

Mayor Rudolph Menchl admits that city officials have been deluged with complaints about the noxous gases, making it difficult for householders to sleep normally. He has asked the State Board of Health to send representatives to make recommendations.

Meanwhile, the Mayor says, the fire department has been unable to extinguish the fire, although firemen have poured more than 1,000,000 gallons of water a day on the smoldering coal.

Company bulldozers are moving the coal, but this will take some weeks, during which the public—and the fire department—will be "unhappy" about the whole stinkin' thing.

The fire is believed to have started from spontaneous ignition.

* * *

B-29 Crash and Fire Kill 16

Sixteen persons, including five children, were killed and seventeen injured early December 17, last, when a B-29 Air Force Superfortress attempting an emergency landing went out of control and crashed into an Air Force housing development in Guam.

Some of the victims were killed as they slept, after the big plane exploded into flames as it crashed and then tore a swath 150 feet wide and half a mile long through the housing area.

The plane, which carried a crew of thirteen and three observers, had taken off on a routine flight. Soon after takeoff, the pilot radioed he had engine trouble and was returning, for an emergency landing. The plane made one normal approach and then the pilot tried to circle again. While on his second approach the pilot reportedly lost control and sloughed a quarter mile to the right of the runway, slamming into houses amid blasts of gasoline.

Houses in the development were ripped apart and sprayed with flaming chunks of gas-covered wreckage. Eight officers' homes in all were destroyed, two others partially demolished, and three others scorched by he resulting fire. Many other structures in the housing development were threatened but fire fighters were able to prevent their involvement.

* * *

Reluctant Firemen Stick to Their Quota

A fire brigade in Communist Hungary in November refused to put out a fire on the excuse that they had already fulfilled their work quota for the year.

Just what this "work quota" is, deponent saith not, but it is learned that the Communist newspaper Esti Budapest was very much put out (if the fire wasn't) by the firemen's attitude. It used scorching language to berate Joseph Voeroes, the section leader of the reluctant firefighters.

A. C. H.

* * *

Fire Breaks Down Barriers

The "impenetrable" Iron Curtain was lifted Jan. 5th last, in Berlin to let live fire companies through, thus setting up some kind of an international record.

The border between West Berlin and the surrounding Soviet-controlled countryside is closely guarded by Soviet troops and East German policemen. The roads are blocked with all sorts of obstacles, steel rails, piles of cobblestones, felled trees and the like. Even a mouse couldn't pass through, 'twas said. But somebody did—firemen.

CRACKERJACK

MUNICIPAL FIRE HOSE

NONE BETTER

. . . the noticeably better performance of American Fire Hose is the result of skillful, painstaking manufacture. American does not compromise with quality — as a result critical buyers eventually standardize on American.

LAMINATED CONSTRUCTION

5 . . . calendered sheets

FLEXIBLE . . . balanced weave and premium yarn assure greatest strength and flexibility.

SMOOTH WATERWAY . . . lowest possible friction loss.

DEPENDABLE . . . unsurpassed for ruggedness and long life.

LOWEST COST PER FOOT PER YEAR

AR-2

OTHER AMERICAN BRANDS

WHITE	*TREATED
Crackerjack	Arcolized
American	Arcolized
Municipal	Arcolized
Tiger	Arcolized
Underwriters	Arcolized

*Treated against mildew and rot; water repellent.

ASK FOR BULLETIN

Descriptive literature is available on American Fire Hose — ask for your copy.

THE American RUBBER MANUFACTURING CO.

Factory and General Offices: 1145 Park Avenue, Oakland 8, California, Phone: Olympic 2-6000

Branch Offices: SEATTLE, Smith Tower, Phone SEneca 1727; PORTLAND, Oakes Building, Phone Capital 1706; SAN FRANCISCO, 7 Front St., Phone SUtter 1-0088; LOS ANGELES, 711 E. Gage Ave., Phone Albany 1-9275

THE AMERICAN RUBBER MFG CO. OAKLAND CALIF.

Write for name and address of your nearest American Distributor

On Jan. 5th, a fire broke out on the large Karolinen Hoehe Farm, just outside the city limits. Fire brigades from various British sector districts converged on the scene but were unable to pass the barricades.

People's Police and local farmers "rolled up the Iron Curtain." They broke down and shoved apart the barriers, the firefighters rolled through, and the fire was extinguished.

Maybe they'd better leave this whole question of removing Berlin's political and economic barriers to the firefighters!

* * *

One Dead, 18 Escape, in Train Fire

In an unusual fire, which swept through a Canadian Pullman car on Dec. 30th, last, one passenger was killed and eighteen others dived through a window which a woman had broken with her traveling case as the train came to a stop.

The fire occurred as the crack Canadian National train "The Transcontinental" sped westward from Montreal. The porter Joseph Bailey, discovered the blaze as the train was speeding through Pembroke, Ont., when he heard an unaccountable noise in a compartment. He investigated and when no one answered his knock, he opened the door.

Bailey told police he saw a mattress buring and the compartment's occupant was trying to extinguish it. The occupant was later held for investigation by police when he told them "I guess I went to sleep while smoking."

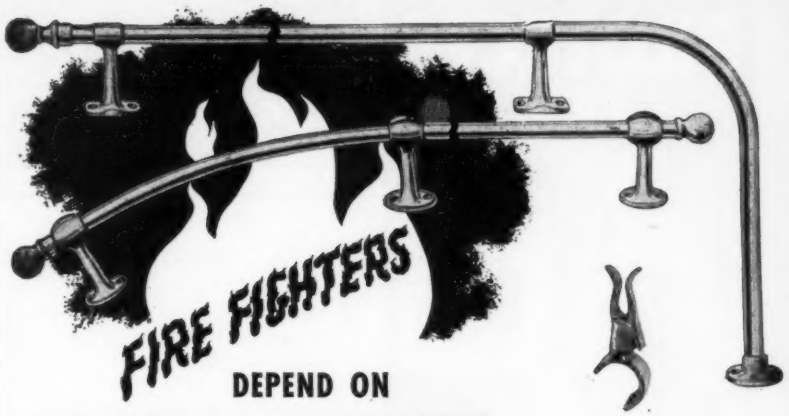
The victim was Dr. H. A. Collins, 61 years old, of Ottawa.

The cries of the porter and the cloud of smoke alerted all the car's occupants, but it remained for the woman passenger to provide the exit when she smashed open a window through which the eighteen escaped after the emergency stop signal was given.

* * *

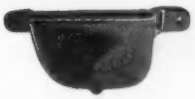
Hot Off the News Ticker

When an Italian freighter blew up off the coast of Yugoslavia, Dec. 22, three crewmen were killed. Radio messages said two other sailors aboard the 180-ton Fernando were injured, while the captain and two crewmen escaped unhurt . . . Fire, whipped by storm winds, swept the tiny Italian village of Corces de Silandro early on Jan. 2, last, destroying ten houses and leaving 50 persons homeless . . . Six inmates of a mental hospital at Ichikawa, 10 miles east of Tokyo, were burned to death Jan. 3rd, when fire of unknown origin destroyed a confinement ward . . . One of the oldest and most famous of students' inns, in the historic city of Heidelberg, Germany, which was built in 1472, was destroyed by fire Jan. 3rd. Firemen and police fought the fire for two hours . . . The United States government on Jan. 4th donated $150,000 to the British Crown Colony of Honk Kong for resettlement of 60,000 Chinese refugees made homeless in a fire at a squatter's village on Christmas Day . . . A U. S. Marine was burned to death in his sleeping bag and four others were injured when fire swept through two tents at Camp McNair near Tokyo just before New Year. Fire was caused by a leaky oil stove . . . Admiral Sir Guy Charles Cecil Royle, 68, former Chief of the British Naval Air Service, died Jan. 5th near his home in Winborne, England, apparently of overexertion while helping firemen extinguish a fire.



DEPEND ON

ATTWOOD HARDWARE



Fire fighting is an exacting occupation. One mistake may be the last.

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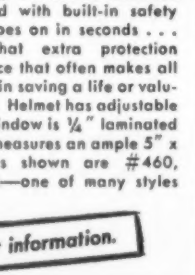

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The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SHIFTING TRENDS IN HOUSE WATCH?

THE discussion in the Round Table is a continuation of that which appeared in the January issue on practices of fire departments in maintaining house watches.

The generous response from our readers makes it necessary to carry the discussion over to this issue and to the March issue as well.

Readers are invited to send in their comments on this subject. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

Kenneth R. Putnam, Chief, Kitchener, Ont.: A day watch is maintained by a dispatcher who is on duty ten hours a day. The night watch dispatcher is on duty fourteen hours, but is permitted to retire between the hours of 10 P.M. and 6 A.M. with a fire telephone installed by his bedside.

All companies are alerted by a public address system and private telephone lines.

This method that has been employed has worked out satisfactorily so far.

With the continued growth of the city and the expansion of the fire department, we are in the process of reorganizing all branches of the fire service and it is anticipated a twenty-four hour watch will, then be maintained.

We are a paid department with a personnel of fifty-five permanent members.

August Schalk, Chief, Champaign, Ill.: We maintain a twenty-four hour house watch. Our dormitory is located on the second floor of the fire department and in it we have our control board, just like the one we have downstairs. On this control board we have three regular telephones by which we receive all our fire alarms. In case one telephone is busy, the call automatically jumps over to the next telephone. Since there is only one telephone listed in the phone book, we get most of our fire alarms over the one telephone.

One fireman sleeps by this control board at night, and his bed is so close to this control board that on most of the fire alarms, he can answer the telephone without getting out of bed. Since the same fireman sleeps by the control board on his twenty-four hour shift, and he is so accustomed to answering these telephones out of a sound sleep, none of these three telephones rings more than once before it is answered.

During the day each fireman stands a two-hour watch in the control room downstairs. This day watch starts at 7 A.M. and ends at about 10 P.M., when the fireman that sleeps by the control board in the dormitory, takes over.

This method has worked out very satisfactorily.

I would like to tell you how we alert the firemen who don't wake up when the telephone rings. As soon as the fireman answers the telephone and gets the address of the fire, he pushes the house gong, which automatically turns on all the lights in the dormitory and downstairs in the truck room and then yells out the address twice, so the drivers can be sure of getting the right address.

One suggestion of improvement for this method might be to install a loud speaker in the dormitory like the one we have in the control room upstairs.

K. L. Evans, Chief, Reno, Nev.: We maintain a twenty-four-hour house watch. The men stand watch from 8 A. M. to 12 Noon; 12 Noon to 4 P. M.; 4 P. M. to 9 P. M. and 9 P. M. to 8 A. M.

The 9 P. M. to 8 A. M. watch relieves the 4 P. M. to 9 P. M. watch for dinner. At 10 P. M. the 9 P. M. to 8 A. M. watch may retire. A bedroom is provided with adequate telephone signals to wake the man on watch. This system has just about reached the point where it will be necessary to have a round-the-clock live watch, which we would operate in four-hour intervals.

Direct telephone lines connect all stations with headquarters and all communication systems, automatic

HERE ARE THE QUESTIONS

1. **Does your department maintain a 24-hour house watch?**
2. **If so, how long does each member of the company stand watch: (a) day watch; (b) night watch?**
3. **If no night watch is maintained, how does your system work in regards to alerting companies at night?**
4. **Has the method you employ worked out satisfactorily?**
5. **Any suggestions for its improvement?**
6. **Is your fire department paid or volunteer?**

alarms, etc., are equipped with signaling devices to wake the night watch.

We have experienced no difficulty with this method of operation to date.

I firmly believe in a live watch if it is possible to operate same.

Our department is a fully paid department. The population within the city limits is about 40,000. We have three fire stations and one under construction. Personnel consists of eighty men including the chief, a fire prevention bureau of four men and a clerk.

C. F. Krambeck, Chief, Dodge City, Kans.: Our department keeps a twenty-four-hour watch at the headquarters station. Each man stands a two-hour watch up until 10 P. M. At 10 P. M. a member of the company takes over for the remainder of the night. This man then sleeps his next tour of night duty and the watch is taken from 10 P. M. until 8 A. M. by another member of the company. In other words, the watch is rotated from one man to another. In our sub-station the officer sleeps beside the alarm phone. The sub-station is also equipped with radio. This plan was put into operation about a year ago and has worked out very well. However, I believe that we should have a full-time watch man or alarm operator, as this would relieve on-duty men of the responsibility of the alarm system and also the public and office phones.

Our department is a paid department.

E. L. Surfus, Chief, Eugene, Ore.: Our department maintains a twenty-four-hour watch which is handled by three men doing just that duty. One man, the superintendent of communications and records, works eight hours five and a half days a week and two dispatchers work sixteen hours on and thirty-two hours off. The two dispatchers thereby work twenty hours on Saturday and twenty-four hours on Sunday. The dispatchers work a sixty-two-hour week and the superintendent works a forty-four-hour week. The reason for the difference in hours is because the superintendent does all the record work and service on communications and the dispatchers just stand and watch and receive alarms. They have a bed next to communications and sleep at night.

We have used this method for the past six years and it has worked out very satisfactorily.

Our department is a paid department of forty-nine men and three stations with two-way radio, telephone switchboard (PBX), and twenty-six fire-alarm boxes.

George W. Scarlett, Chief, New Britain, Conn.: House watch is maintained in all stations until 11 P.M. Members in the dispatch bureau are on duty 24 hours a day, and telephones are connected from the switchboard to all stations with an extension to the officers' quarters.

When an alarm is received after 11 P.M., the dispatcher calls the officers of the companies responding. As soon as the officer receives the location, he pushes a button tripping the house lights and striking the gong on the apparatus floor and in the sleeping quarters thereby alerting the men.

We feel this method works very satisfactorily and the few seconds that might be lost are more than offset by

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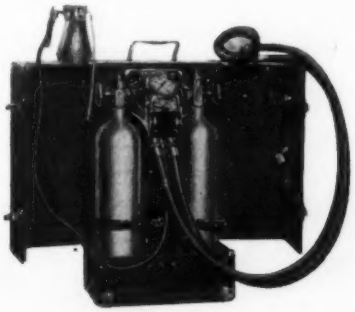

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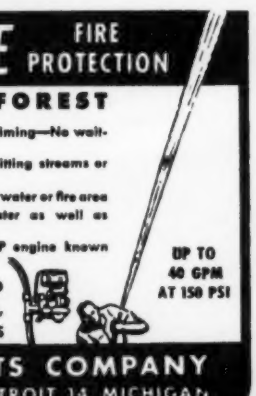

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the fact that the men have had a rest and are therefore in better condition to meet any emergency that might arise.

Our department is fully paid.

A. W. Lang, Chief, Enid, Okla.: Our department does maintain a 24-hour watch. Each watchman is on watch 8 hours (7 A.M. to 3 P.M.; 3 P.M. to 11 P.M. and 11 P.M. to 7 A.M.). This method seems to be working out all right in our department.

One thing that would improve the system, in my opinion, would be to hire three men to do nothing but watch the desk and to, perhaps, keep the fire reports. As it is now, the watchman must also catch his place on his respective rig after receiving the alarm. However, after the alarm is received, if everything doesn't roll, the driver of the aerial ladder takes over the desk until the station is back in service with all equipment.

Our department is a fully paid department.

Up and until November of 1953, we were working 10 and 14. At that time the watchman was on the desk during his respective tour of duty, alternating among the men, according to their place on the roster.

We are now on a six months trial of the 24 on and 24 off system. The watch comes around a little more often, but it is not for as long a time as before.

Steve Taylor, Chief, Boise, Ida.: We do not maintain a 24-hour house watch. The system we use works very satisfactorily. We have five stations and one fire alarm headquarters. Three of the stations are of one-story and single engine companies. Two are multiple engine companies and two stories. In the two-story stations the office and sleeping quarters for the officer in charge of the station are on the first floor. They are in plain view of the door entering the building, are well lighted and have push-buttons and buzzers to alert the stations. A dispatcher is on duty in the alarm headquarters at all times. It is only a matter of seconds to transmit information from any of the stations to the dispatcher by P. B. X. extensions.

Gayle V. Coger, Chief Engineer, Fresno, Cal.: Our department works twenty-four-hour alternating shifts. We maintain a house watch during daylight hours. The officer in charge sleeps in the office during night hours.

During day hours company members are not required to stand watch longer than two-hour periods at any one time.

During both day and night hours all signals affecting movement of equipment are transmitted over primary and secondary circuits respectively. We have found that in a city the size of Fresno this works very well. However, it probably would not be good in a larger city as the signals would be coming in at frequent periods.

We have nine stations and the department is fully paid.

Andrew F. Broussard, Chief, Lafayette, La.: We are a three-station department, having a central station as headquarters. We have a chief on duty at all times. All alarms have to clear headquarters. Our box alarm system is old, but is received by all stations at the same time. All telephone alarms come into Headquarters and are relayed to sub-stations by Vocalarm or telephone. Each station is equipped with two telephones, one for fire only. Only the one at Headquarters is listed. The fire phones have large bells, audible in all parts of the stations.

We have at Central Headquarters a man known as houseman. He stays at the station when an alarm is received and handles all calls, calling off-shift officers and men as needed, relaying calls to sub-stations and operating radio.

We do not maintain a strict 24-hour watch. The day watch is maintained by having someone stay near telephone, Vocalarm, fire alarm and radio at Central Headquarters.

The night watch starts at 9 P.M. and we have five watch periods during the night from 9 P.M. to 12 P.M.; 12 P.M. to 1:45 A.M.; 1:45 A.M. to 3:30 A.M.; 3:30 A.M. to 5 A.M. and 5 A.M. to 8 A.M. The men alternate watch every night. Sub-stations do not stand watch. This system has been very satisfactory.

We will put in a new fire alarm system during this year which will greatly improve what we have. We may have to change our system some.

Our department is paid. We do have a volunteer organization that is called out on all large fires and help out in many ways.

Theron J. Morgrage, Chief, Goffstown, N. H.: Our department does not keep a 24-hour watch. It is covered from 8 A.M. to 5 P.M. when we are apt to be shorthanded of fire fighters.

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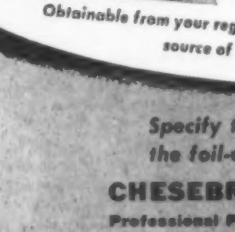

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The sixteen remaining hours are covered by the use of five red telephones (or fire phones) and an alarm transmitter in the home of the chief. The five red phones are in the fire station and in the homes of the various officers.

When a call for fire is received on the red phones, it rings all five phones simultaneously and an alarm is transmitted either from the fire station or the chief's home.

When the chief is absent, one of the fire fighters is put on duty at the fire station to cover the transmitter and at least one of the officers is covering at home on the red phone. We find this system very satisfactory.

The other district in our town is operated independently on four red phones. One red phone is not very far from the fire station and the person receiving the call starts a siren situated atop the fire station.

A more elaborate fire alarm system and 24-hour house watch would improve our departments.

Both departments are volunteer with the exception of the chiefs.

Joseph E. Scanlon, Chief, Lynn, Mass.: We maintain a twenty-four hour house watch.

The day watch stands watch for two hours and the night watch for two hours, except in station where radio transmitter is located where a 4-hour watch is maintained around the clock. This system is very satisfactory.

I believe the watch around the clock is essential for the promotion of efficiency.

We are a paid department.

George Daniels, Chief, Roswell, N. M.: We do not maintain a 24-hour house watch.

All firemen sleep during the night. The alarm room operator uses a roll-away bed which is near the telephones at night. During the day the bed is folded up and put into the closet. Our alarms come through a telephone switchboard as we do not have a fire alarm box system.

When the fire alarm sounds, it alerts the alarm room operator and all the firemen at the two stations we maintain. If the alarm is turned in through our business phone, the operator alerts the firemen at both stations. This method has worked all right to the present time.

I feel improvements can be made in our system in regard to alerting our sub-station in case we receive an alarm through the business phone (the call may be for their district). I feel we should have some kind of push button alarm for this purpose or a direct line to sub-station.

C. D. Williams, Acting Chief, Las Vegas, Nev.: We do employ the 24-hour watch system in our department inasmuch as we have no box alarm system, consequently no "jokers" in the stations. We let each shift at each station set up their own schedules, but they all average 4-hour watches in the daytime and either 2 or 3-hour watches at night. All alarms are transmitted by radio from our central station, therefore the watches are necessary and have proven very satisfactory. I know of no way of improving the system at this time.

We are a paid department.

Newton L. Wheeler, Chief, Miami, Fla.: Miami has a paid department, working

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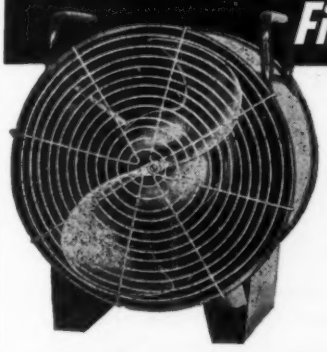

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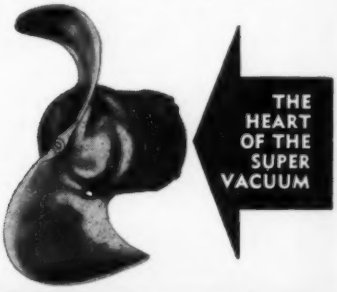

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a 60-hour week, on alternate 24-hour shifts. We have a 24-hour watch system in all our stations. In the high value district our watch is entirely wakeful, with the commanding officer taking the first watch from 7:55 A.M. until 12 noon. The junior officer takes over until 8 P.M., after which privates hold four-hour watches through the night.

In the outlying districts the commanding officer holds the morning watch, the junior officer the afternoon watch and the private takes over at 8 P.M. and remains until 7:55 A.M. There is a fold-away bed or studio couch in the officer's room which he uses during the night. He sleeps next to the watch desk and is alerted by the joker bell. If it is a call for his company, he activates the rest of the men by ringing the house gong. He gives the address to the officer and driver and takes his place on the apparatus. We find this system to be very satisfactory.

M. G. Brown, Chief, Winston-Salem, N. C.: Our department maintains a constant 24-hour watch at operator's desk. This method of watch is maintained by the assignment of four regularly appointed operators, each on an eight-hour shift. This provides for each operator eight hours on duty and 24 hours off duty. We find this method very satisfactory.

* * *

The following replies are in answer to a previous Round Table on recorders.

T. L. Townley, Chief, Norman, Okla.: We are not equipped with recorders, but I believe they would be beneficial to fire departments in receiving alarms.

All our alarms are received over the telephone and the operator putting the call through monitors our fire calls. However, this will not work when we get dial telephones.

John W. Cole, Chief, Silver Springs, Md.: Our fire alarm headquarters is equipped with recorders for recording telephone and radio conversations. Both work automatically.

These recordings are a means of checking for correct address; they are used as a permanent record of the hazards reported and provide a record of telephone conversations and the voice of the false alarmer to be used for future checking and in the event of apprehension, the recordings are used as evidence in convicting the offender. They also give a running account of fires to be used at a later date for training purposes.

* * *

The following replies are in answer to a previous Round Table on the installation of underground tanks in high value districts.

W. F. Roach, Fire Marshal, Fire Prevention Bureau, Boise, Ida.: We have a fire prevention code patterned after the National Board's Suggested Fire Prevention Ordinance.

Permits are granted by the Fire Prevention Bureau.

The Chief, or Fire Marshal, has power to control any fire hazard created by the installation of underground tanks in high value districts.

V. L. Crusinberry, Chief, Sioux Falls, S. D.: In 1953, the State of South Dakota passed a law giving the State Fire Marshal authority to promulgate rules and regulations for the handling, storage and transportation of flammable liquids. These rules and regulations were based on NBFU Pamphet No. 30 and NFPA Pamphlet No. 385. The City of Sioux Falls adopted the NBFU Fire Prevention in Code in July of 1953, and, of course, this ordinance conforms to the State Law.

Permits and licenses for all installations are issued by the Fire Prevention Bureau.

The Standards themselves specify the requirements, not only in minor extinguishment but proper electrical installation and spark-proof motors as well as proper valving of the entire system.

All of the authority rests in the hands of the fire chief. Where new insallations are made, they must conform to the Standards as outlined in Pamphlet No. 30. The fire chief has the authority to cause to be removed any hazards that might endanger exposed property.

P. O. Adams, Administrative Officer, Bakersfield, Cal.: Oil tanks of large capacity are not permitted to be installed underground (or otherwise) in high value congested districts.

Permits are issued by the Fire Prevention Bureau of the Bakersfield Fire Department.

The installation of containers for storing and handling of flammable liquids is required to be in conformity with the requirements of NBFU Pamphlet No. 30, which Standards have been adopted by reference by City Ordinance.

This problem is of little consequence in our city, inasmuch as all heating in our community is by natural gas.

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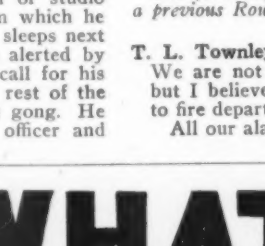
POSITIVE AND EASY SHUT-OFF UNDER ANY PRESSURE.



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Obituaries

Chief James Devlin Dies

Fire Chief James A. Devlin, 62, of Chester, Pa., died January 12th in Mercy Hospital, Chester, following an illness of two months.

A fireman since 1934, when he joined Moyamensing Hook & Ladder Co. of Chester, he was named fire chief in 1952. He served as building inspector for Chester, and once ran for mayor.

Last fall he suspended two of Chester's fire companies for ignoring his ban against taking companies out of town for a convention and parade.

Ex-Chief G. B. Holst Dead

George B. Holst, retired fire chief of Marietta, Ohio, died on January 6th, following a traffic accident 10 days prior. He was struck by an auto while crossing the street.

He was born on August 17, 1875, and was appointed to the fire department April 1, 1908. He was made Chief on October 10, 1910, and retired December 31, 1942.

He was past president of the Ohio Fire Chiefs Assn. and a life member of the Assn. He was a charter member of Marietta Fire Fighters Assn. 442.

D. E. Drennen is the present Chief.

Asst. Chief R. M. O'Leary Dead

Assistant Fire Chief Robert M. O'Leary, 50, of the Meriden, Conn., Fire Department, died on Jan. 3, shortly after he was seized with a heart attack while commanding a fire fighting unit at the scene of a minor blaze in that city. O'Leary collapsed in the street after the fire in a small business building had been extinguished. Fire Chief Leonard A. Petrucelli said the heart seizure apparently was caused by over-exertion, intense heat and smoke inhalation.

Asst. Chief O'Leary, who joined the Meriden Fire Department in 1917 as a substitute, was a well known professional football player in his earlier days. He became Assistant Chief on July 12, 1947.

Assistant Chief O'Leary was a member of the New England Association of Fire Chiefs.

TOM MAGNER.

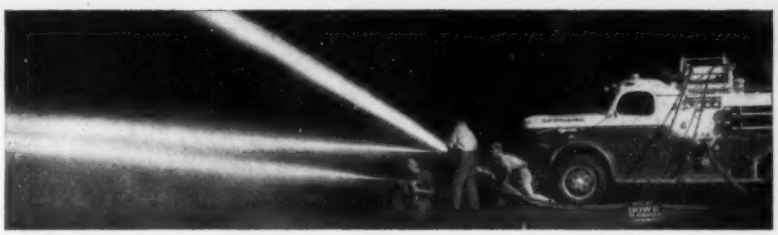
New Station for Charlotte

An ultra-modern fire station, to be No. 9, will be built soon (this Spring) on East Boulevard at Hillside Drive in Charlotte, N. C.

B. O. Vannort Engineers, Inc., and Jas. H. Benton, architect, are ready to submit final plans. It is understood that construction will require about six months.

The building will have a white marble chip roof, and will be of Norman brick construction. The wing walls will conceal a terrace at the rear. The sashes will be of aluminum awning type, and will include about 5,000 square feet. The structure will have an apparatus room, watch room, dining room, lobby, kitchen, dormitory and locker, toilet and shower rooms. There will be a class room in officers' quarters, and an office for the fire captain. Two new trucks are to be purchased for the station.

D. G. SPENCER



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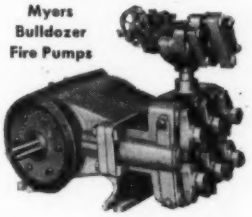

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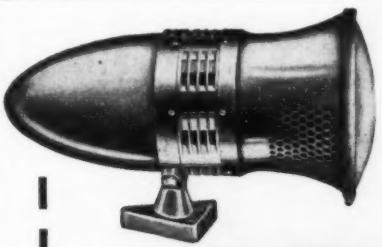

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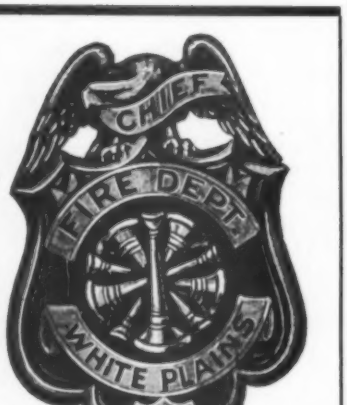

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Convention Dates

Feb. 23-26—FIRE DEPARTMENT INSTRUCTORS' CONFERENCE. Annual meeting, Memphis, Tenn. Director, Richard E. Vernor, P. O. Box 1089, Chicago 90, Ill.

Apr. 6-9—THIRD ANNUAL MARYLAND SHORT COURSE FOR FIRE INSPECTORS. Annual meeting, University of Maryland. For information contact Robert C. Byrus, Director Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

Apr. 25-27 — NEBRASKA STATE FIRE SCHOOL. Annual meeting, Grand Island Airport, Auditorium Hangar No. 3, Grand Island, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

Apr. 26 - 30 — MINNESOTA STATE FIRE SCHOOL. Annual meeting, Agricultural Institute, Farm Campus, University of Minnesota, St. Paul 1, Minn. Co-Chairmen, Dr. J. O. Christianson, University of Minnesota, and Leonard C. Lund, Deputy Commissioner, Fire Marshal Department, St. Paul 1, Minn.

May 1-2—REGIONAL FIRE SCHOOL FOR WESTERN MARYLAND. Annual meeting, Frostburg, Md. For information contact, Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

May 2 — NEBRASKA REGIONAL FIRE SCHOOL. Spalding, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

May 8-9—FIRE SCHOOL FOR EASTERN MARYLAND. Annual meeting, at a place yet to be announced. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

May 16 — NEBRASKA REGIONAL FIRE SCHOOL. Beatrice, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

May 18-21 — IOWA FIRE SCHOOL. Annual meeting, Exhibit Hall, Iowa State College, Ames, Iowa. Supervisor Firemanship Training, Mark Brosier, Engineering Extension Service, 116 Marston Hall, Ames, Iowa.

May 21-22—PUMP SCHOOL. To be held at the University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

May 22-23—NAUMEE VALLEY FREE FIRE SCHOOL. Annual meeting, Napoleon, Ohio. For information contact Earl Campbell, Box 164, Napoleon, Ohio.

May 23 — NEBRASKA REGIONAL FIRE SCHOOL. North Bend, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

May 28-29—PUMP SCHOOL. To be held at the University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

June 4-5—PUMP SCHOOL. To be held at the University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

June 6 — NEBRASKA REGIONAL FIRE SCHOOL. Bloomfield, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 6-8—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Martinique, New York, N. Y. Secretary-Treasurer, Ward A. Bohner, Fire Coordinator, Oneida County, Fire Headquarters, Utica, N. Y.

June 7-10 — SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Charlotte, N. C. Secetary-Treasurer, Chief G. A. Mitchell, Fire Headquarters, Opelika, Ala.

June 11-12—PUMP SCHOOL. To be held at the University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

June 13 — NEBRASKA REGIONAL FIRE SCHOOL. Gordon, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 13-18—SOUTH DAKOTA FIRE SCHOOL. Annual meeting, Hot Springs, S. D. Secretary, Robert W. Hanigan, Box 423, Pierre, S. D.

June 16 — NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Ada, Ohio. Secretary, Earl Campbell, Box 164, Napoleon, Ohio.

June 17-19—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Haverstraw, N. Y. Secretary, Charles M. Fales, 92 Clove Avenue, Haverstraw, N. Y.

June 18-19—PUMP SCHOOL. To be held at the University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

June 20 — NEBRASKA REGIONAL FIRE SCHOOL. Chappell, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 21-23—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Colorado Springs, Colo. Secretary-Treasurer, Chief Ray Tiller, 319 East 5th Street, Waterloo, Iowa.

June 21-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, The Wentworth by the Sea, Portsmouth, N. H. Secretary, John W. O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 21-24—ILLINOIS FIRE SCHOOL. Annual meeting, Gregory Hall University of Illinois, Champaign, Ill. Registrar, Chief Roy W. Alsip, Box 8, Champaign, Ill.

June 27—NEBRASKA REGIONAL FIRE SCHOOL. Cambridge, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

July 15-17 — CENTRAL NEW YORK FIREMEN'S ASSOCIATION. Annual meeting, Watkins Glen, N. Y. General Chairman, Jack H. Irish, Jefferson Hotel, Watkins Glen, N. Y.

Aug. 9-14 — INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual meeting, Miami, Fla. Secretary-Treasurer, George J. Richardson, A. F. of L. Building, Washington 1, D. C.

Aug. 16-19—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Saskatoon, Sask. Secretary-Treasurer, Allan H. Clark, Chief of Fire Department, Lakefield, Ont.

Aug. 23-26—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Long Beach, Cal. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Sept. 7-10—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Evanston, Ill. Secretary, R. W. Alsip, P. O. Box 8, Champaign, Ill.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Lincoln, Neb. Secretary-Treasurer, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

SEND IN YOUR MEETING DATES

As a service to its readers FIRE ENGINEERING endeavors to maintain an up-to-date list of all county, state, regional and national organizations and associations in the fire service, and the dates on which their annual conventions are to be held.

Officers of associations are invited to forward the editors, at the earliest opportunity, the roster of association officers, and the dates (actual or approximate) on which conventions are scheduled.

This information will be listed under the heading "Convention Dates."

Questions and Answers

Temperatures of Burning Cigarettes and Matches

To the Editor:

During class discussion of the burning temperature of various material, several questions were asked, the correct answers to which we could not supply. Would appreciate your help.

1. What is the temperature of a burning cigarette?
2. What is the temperature while actually being smoked?
3. What is the temperature when lit but just being held in one's hand or lying in an ash tray?
4. What is the temperature of a burning match?

F. R. P.

Answer: With reference to the temperature of a burning cigarette, this is one of those simple questions which unfortunately can't be answered so simply. The temperatures generated vary with the dryness of the tobacco, the draft conditions, the amount of sodium nitrate used in the tobacco to accelerate combustion, and some other factors, and the temperatures themselves are not easily measured accurately.

However, temperature measurements made with an optical pyrometer indicate that the temperatures vary between 1500 and 1800 degrees F., the former when the cigarette is smoldering and the higher figure when it is being puffed.

With reference to the temperature of a burning match, the ignition of the "strike anywhere" match is around 325 degrees F. The burning temperature depends upon many factors, including the type of wood, or paper, paraffin, etc. There are no figures available on the temperatures of burning matches.

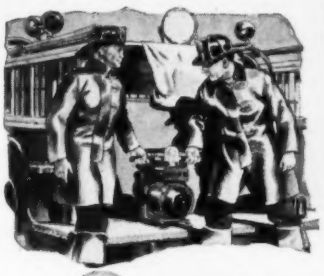
Care of Apparatus Upon Returning from Fire

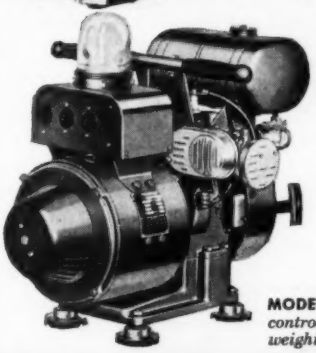
To the Editor:

In a recent examination the following question was asked: What care and attention should be given to a pumping engine upon its return to quarters after a working fire to ascertain and assure its proper working condition?

I answered it as follows and received 60 as a grade for this question:

1. Wet hose should be replaced with dry hose in apparatus body.
2. Check oil and if necessary, add. If oil is then or unnecessarily dirty, change.
3. Check gasoline, and if necessary, add or fill gasoline tanks.
4. Check water in radiator. If necessary, add water.
5. Check all lubrication points on





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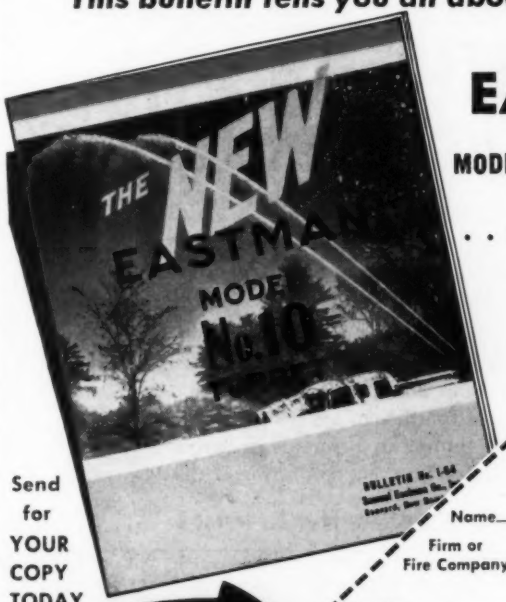

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Please send me a copy of your bulletin No. 1-54

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apparatus for loose or missing parts.

6. Thoroughly clean apparatus and wipe parts which are subject to rust.

7. Check with driver of apparatus for any steering or breaking difficulties he may have noticed in going to or returning from the fire. If there are any, notify repair division.

8. Place apparatus in commission.

M. F. R.

Answer: Your question is one of a type which has caused considerable difference of opinion in firemanship examinations, largely because the procedures to be followed by an engine company upon its return to quarters are usually indicated in the rules and regulations or action guides of the department of which the company is a unit. Thus one department may call for the replacement of all wet hose on a pumper or hose truck and another may permit such hose to be placed back on the rig following the fire, and retained in the hose body. If there are regulations and orders issude by a fire department governing the procedures to be followed in this sort of operation, the question asked by the examiner would logically be based upon those regulations and/or orders.

The question on which you desire comment does not state the nature of the pumping operation and whether the apparatus is equipped with booster tank or whether it is a triple or quadruple pumper unit. Obviously, if the apparatus includes booster pump and tank and hose, and power-raise aerial ladder, as in a "quint," the procedure to be followed in checking it over and readying it for operation following return to quarters must be broader and more complicated than for a plain combination pumper. Furthermore, if pumping operation entailed pumping salt water or any contaminated water, the action to be followed should call for more thorough pump cleaning and overhaul than otherwise.

It would seem therefore, in preparing your answer you would assume that the pumper is a standard combination rig, and the pumping operation a normal one.

Taking your eight answers individually we might comment as follows:

1. Wet hose should be replaced with dry hose in apparatus body. This is a fundamental requisite. It would seem unnecessary to have added that wet hose should be placed in dryer or hung up for drying after being thoroughly inspected for damage or injuries.

2, 3, 4. Checking oil, gasoline and water in radiator to see that supplies are adequate, as you have stated, is in accord with the practices recommended in the Fire Department Pumping Manual of the Association, and the operational guides of leading fire departments.

5. Check all lubrication points on apparatus for loose or missing parts. This procedure is recommended in the IAFC Manual, with the added recommendation that reports on the same be made.

6. Thoroughly clean apparatus and wipe parts which are subject to rust. This, also, is as counselled in the IAFC Manual. In the cleaning process, care should be given to inspecting parts so cleaned and dried.

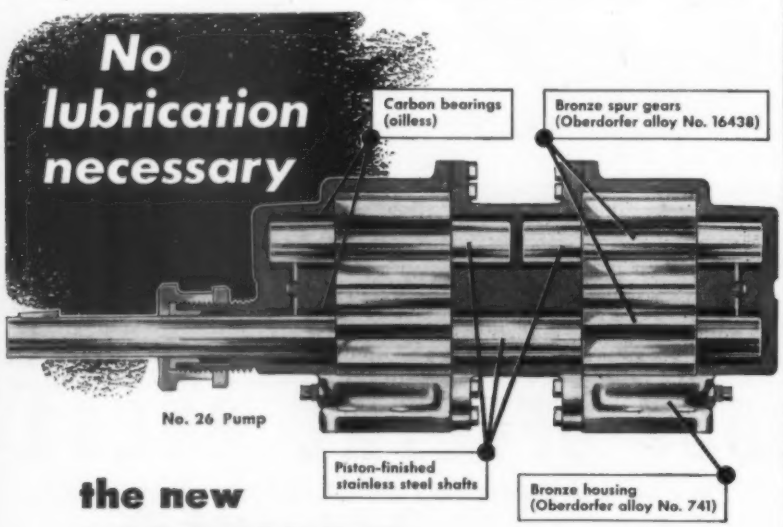
7. Check with driver of apparatus for any steering or braking difficuties he may have noticed while going to or returning from fire. If any, notify repair division. It is the duty of the officer in charge to see that an immediate check of steering and braking is made upon return from a fire or run. Whether this is done through the driver or by the officer, or both, is usually determined by the individual fire department regulations. In addition to these two fundamentals, any failure in driving mechanism, lighting system, etc., should be reported.

8. Place apparatus in commission. Although this concluding statement is not indicated as particularly relevant to the question, it is customary in examinations containing similar problems to conclude with it.

It is noticed that aside from replacement of hose, and cleaning of the apparatus, your answers are chiefly concerned with the fueling, lubricating and other servicing of the motor, pump, etc. This is no doubt as it should be inasmuch as those are fundamental points in readying any apparatus. However, there are some details which are required in most fire departments.

It is requisite in many that, upon returning from a working fire, check should be made to see that all tools and equipment carried on the apparatus have been returned and are in good working condition. Your answers do not include anything on this detail. Some department regulations include regulations that all tools, equipment, etc., lost or picked up and not belonging to the company unit, shall immediately be reported to the proper authorities.

If gas masks, breathing apparatus, inhalators or like equipment carried on the apparatus was used during opera-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These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

tions, special care should be taken to clean and sterilize facepieces, replace canisters, tanks, etc. Equal care should be given portable extinguishers that might have been used.

Your answers do not specifically include inspection of tires and/or battery. Without having the examiner's key answers before us, we cannot determine whether or not inclusion of these other details would have given you a better grading. It is, of course, difficult to know where to stop when it comes to answering a rather broad question such as this one. Thus in a similar examination the examiners expected contestants to quote from or refer to regulations of the department which read something like this: "Examine all bolts, spring slips, shackles, brake mechanism, steering arms, batteries and lights. Also check gasoline supply, oil in crankcase and water in radiator and inspect all parts of motor" which is a pretty big order.

Relay Pressures

To the Editor:

In relay pumping it is desired that the pumper at the plug furnish the second pumper with water at 20 pounds pressure, regardless of distance between pumpers up to 1,000 feet.

Could you give a formula that the engineer of the pumper at the plug could use to determine how much engine pressure is necessary to furnish 20 pounds pressure to the second pumper?

H. E. R.

Answer: There is no simple formula which will give you engine pressure required to furnish 20 pounds pressure at the inlet of a second pumper in a relay line.

Factors which must be known in the solution of such a problem include: 1. length of hose line between pumpers; 2. diameter of hose lines; 3. size of nozzle; 4. nozzle pressure (or engine pressure if nozzle pressure is unknown).

The procedure is as follows: First find the flow in gallons per minute in the line. This flow is the same quantity of water per minute that is being discharged from the nozzle and is secured by the formula $Q = 29.7\ d \times d \times \sqrt{P}$. "d" is the nozzle diameter in inches; P, the nozzle pressure in pounds per square inch, and Q, the flow in gallons per minute.

After you have determined the flow in gallons per minute from the above formula, you then find the friction loss per hundred feet of hose (if the hose is of 2½-inch diameter) by the following method:

F. L. per 100 ft. of 2½-in. hose $= 2 \times Q_1 \times Q_2 + Q_2$, where Q_2, in this case, is the flow in *hundreds* of gallons per minute.

Then find the friction loss in the line between the pumpers by multiplying the length of line (in hundreds of feet) by the friction loss per hundred feet (as secured above).

After you have secured friction loss, add twenty pounds, representing the inlet pressure, to the friction loss and the sum so secured will be the engine pressure required.

Oil Reservoir — Assures positive lubrication of stem threads.
Dry Top Design — Prevents freezing of stem threads.
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FIRE HYDRANT
"O" Ring Seals — Make permanent water-tight seal around stem.
Breech Locked Nozzles — Interlocking lugs prevent blowout.
Safety Stem Coupling and Safety Flange — Coupling and flange break on impact, preventing damage to stem and barrel. Permits convenient facing of nozzles. Extension sections may be added or upper barrel may be changed from two-way to three-way hydrant without digging or water shut-off.
Compression-type Main Valve — Closes with water pressure.
Double Drain Valves — Integral part of main valve assembly.
Double Drain Openings — Force flushed each time hydrant is operated.
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The New GA-8 PACIFIC PUMPER

Now in regular service and field tested and approved, the new "GA-8" is showing itself to be another top performer in the famous PACIFIC PUMPER line.

With or without electric starter* the lightweight "GA-8" is especially adapted to tanker use . . . as a portable unit the special sled-type mounting means easy handling in rough terrain. Light enough to be readily carried, the air-cooled, 4-cycle engine develops top volume and pressure for its weight.

The engine and pump are standard Pacific Units and have been fully tested and approved.

Optional equipment.

DIMENSIONS

Length	28¾ inches
Width	19¼ inches
Height	24¼ inches

NET WEIGHT

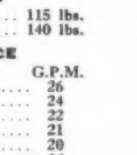
GA-8 (without starter)	115 lbs.
GA-8-S (with starter)	140 lbs.

PERFORMANCE

Pressure	G.P.M.
50	26
100	24
150	22
200	21
250	20
300	16

Normal operation is 20 G.P.M. at 250 lb. pressure.

PACIFIC "Pacolized" Hose



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FIRE EQUIPMENT DIVISION
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Among the Buffs

By Paul C. Ditzel

RIGHT now I'm up to my turnouts in research for a national magazine article on fire buffs and how they got that way. The assignment arrived from the magazine only this week, and in going through my files have come across some letters—long overdue for answering.

For instance, there was the one from PFC Richard L. Nailen, US 56052373, of the 2111th ASU, Station Command, Ft. Holabird, Baltimore, Md., who makes on-the-scene drawings of fire action. He says he draws even at night and uses a flashlight if the light of the fire isn't sufficient. Nailen would like to hear from others with such an artistic flair.

The Speaking Trumpet, official newsletter of the Box 15 Club of Los Angeles, sends along word that the new officers of the organization are: Dale Magee, chief engineer; Bob Olson, deputy chief engineer, and Gene Burt, dispatcher.

Edwin Von Linden, 566 Sweetland Ave., Hillside, N. J., sends along a description of the activities of his fire buff club—"Hoop and Hammer Association." He doesn't explain, though, what significance the unique title has. Edwin mentions that the club has its own canteen wagon, equipped with coffee urns, first-aid kits and similar equipment.

From Down Dixie Way, Charles V. Doolittle, 5624 Calvin Ave., Jacksonville, Fla., reports on a third alarm in a chemical factory.

"I have a radio at home, in my office and in my car, so I can stay in close touch with the department. I have two Link sets and a Monitoradio car set—just leave my home Link set on continually. It hasn't been turned off in months because I've found that turning it on and off causes it to drift," says Charles.

Pvt. William Underwood, RA 16391-053, 10th Quartermaster Co., 10th Infantry Division, Ft. Riley, Kansas, would like to hear from buffs in that area. Said he'll be stationed in Ft. Riley for three years.

Chief Lloyd H. Mallette, Jr., of the Burlington, Ia., Third Alarmers Association, 909 Franklin St., said the club's most recent workout was a four-alarmer. Says the club members are interested in hearing from fans who know of other fire publications besides FIRE ENGINEERING, which is their Bible.

"Within 15 minutes of the time the third alarm has been received, all 26 Third Alarmers had reported to the fire and set up our first-aid station and mobile canteen," says Lloyd, describing the fire in a 110-year-old, four-story brick building at Main and Market Sts., near the edge of the business district.

"Our mobile canteen was purchased in 1951 and rebuilt by the Third Alarmers and firemen with money coming from donations and the operation of a refreshment stand at the annual fire department dance," Lloyd writes.

Another letter, long overdue for reply, comes from Henry G. Frank, Jr., secretary of the Box Fifty-Four Club, Fire Headquarters, Teaneck, N. J. When Henry wrote, the club had 25 active members, all of whom serve as buffs and

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We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

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CASE-SHEPPERD-MANN PUBLISHING CORPORATION

24 West 40 St., New York 18, N. Y.

civil defense auxiliary firemen in that township of 38,000 people.

"Frequent trips are made to departments in this area, as well as to fireboats, houses and alarm bureaus in New York City, which is just four miles across the George Washington Bridge.

"The Box 54 Club is awaiting delivery of a mobile field unit, which will be manned 24 hours a day and will respond to all multiple alarm fires in the township and neighboring communities.

"Our members are assigned to headquarters every night and ride on all alarms. You can see we have many advantages over other buff clubs!" says Henry.

George Warren, Box 362, Forestville Conn., is the proud owner of a 1918 Maxim which formerly turned out as Engine 2 of the New Britain, Conn., Fire Department.

"I used it to advertise the Bristol Firemen's Ball this year and the fellows tell me the advertising paid off. The truck was stripped when I got it; however, I have a lot of things to put on it, such as a pike pole, crowbar, extinguishers and other material. Will have to get a ladder to make it look like a real truck."

George says he'd like to hear from other buffs around the country who also own their own equipment.

That's all for this sitting. Keep those letters and anecdotes responding to this department. The address remains the same: 419 Napoleon St., Playa del Rey, Calif.

Persons in the News

Deignan New Elizabeth Chief

Deputy Chief Edward F. Deignan was named Chief of the Eliabeth, N. J., Fire Department January 19th by the Board of Fire Commissioners, to succeed Chief Patrick J. Keelan when the latter retires from his $7,000-a-year-post in March.

Reading Has Youngest Chief

Reading, Pa., elected the youngest fire chief in its history, in December, when Russell C. Bowers, assistant chief won out over Francis G. Drexler, also an assistant fire chief.

The election was held by delegates from the 14 Reading fire companies at the Firemen's Union, for a successor to Edward C. Dell, who died Dec. 2.

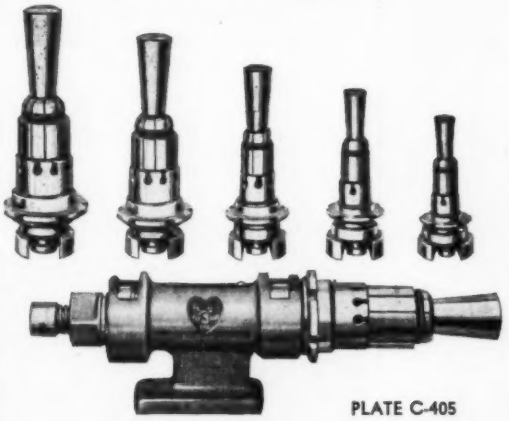
Bowers has been assistant from the district north of Penn Street since 1947. Drexler represented the district south of Penn. Bowers has been a fireman since 1934 when he joined the Neversink Co. He is the eighth chief of the Reading Fire Department.

N. Y. Safety Division Promotions

Roswell L. Pooler, who has served as Field Representative of the N. Y. Division of Safety Bureau of Fire since 1948, has been made Executive Assistant (Acting) to the Director of Safety, taking the post left vacant by the retirement of William A. Collar.

William Marx, serving since 1952 as Field Representative (Rescue) of the Division, has been advanced to the position of Field Representative, (Fire) taking over the duties of Mr. Pooler. He

COMBINATION UNBREAKABLE EXPANDER



GET THIS . . .

One expander body for all sizes of segments from ¾" to 3". Convenient—space saver. Unbreakable segments.

A Quick Inquiry
A Quick Reply

PLATE C-405

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ELKHART INDIANA

CAIRNS

LEATHER
ALUMINUM
PLASTIC

REGULATION
AND
DROP BRIM

FIRE HELMETS SINCE 1836

Write for Catalog 341.

CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

NOT DRY

NOT WET

but WHEAT

WHEAT Batteries make the difference. If you value a good light and have never tried this one, write to us now.

KOEHLER MANUFACTURING CO.

HOWLAND PLACE

MARLBORO, MASSACHUSETTS

McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

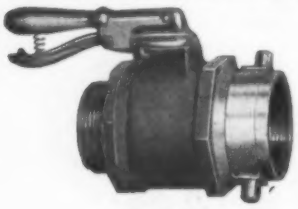

Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

F. N. McINTIRE BRASS WORKS

377 PUTNAM AVE., CAMBRIDGE 39, MASS.

1837 - - - - - - - - 1954

was formerly assistant chief of the Middletown, N. Y., Fire Department and the Stewart Air Force Base Fire Department.

Klinger Chief of L.A. County Fire Department

Keith E. Klinger has successfully passed his probation period and been officially appointed as chief of the Los Angeles County Fire Department.

He replaces the late Chief Cecil R. Gehr, who was fatally injured in Burbank last July while responding to an alarm for a forest fire.

Official Photo L.A. Co. F.D.

Chief Keith Klinger

Recommending Chief Klinger's appointment, County Supervisor Burton Chace made the following statement:

"Regarding Chief Klinger's probationary period, I have classified his service as having excelled in all qualification catagories and I have given him the highest efficiency rating.

"It has been very gratifying to head the Board's Fire Department Committee and I have been impressed during the administration of our late and beloved Chief Gehr as well as that of Chief Klinger and by the number of communications received praising this department and the fact that not one single complaint has been received about the service rendered."

Chief Klinger, now 42 years old, joined the department September 1, 1934, as a fireman stationed at Engine 17 in the Santa Fe Springs Oil Fields district. In July, 1940, he became a temporary captain and received his permanent captaincy on October 1, 1941. Promotion to battalion chief came on September 9, 1944, when he was named to head Battalion 2 in the San Gabriel Valley area.

He was named assistant chief in charge of Division I in April, 1952, and continued to advance on June 16, 1952 when he was promoted to deputy chief.

Chief Klinger took over the top position on July 23, 1952 after Chief Gehr's tragic death.

In addition to his position as fire chief, Klinger also is county forester and fire warden and game warden.

The L. A. County Fire Department is now the third largest fire fighting agency on the Pacific Coast. It has more than 100 engine companies operating from 80 fire stations over the 400 square miles of the sprawling Southern Cali-

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Through continuous research and in cooperation with fire and safety officials, we have perfected a dependable home fire alarm system. It is a great satisfaction to know that our efforts have been responsible for saving many lives in fires.

Information about the Fire-Lite Home Fire Alarm System can be obtained by writing to us.

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Dept. 254
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BETTER HOSE CARE—WITH
CIRCUL-AIR
THE AIR CONDITIONING
FIRE HOSE DRYER

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. No other drying method is so fast—so economical—so easy to use.

Circul-Air Dryers have passed the Approvals Tests and are listed by the Underwriter's Laboratories, Inc., Chicago and the Canadian Standards Association.

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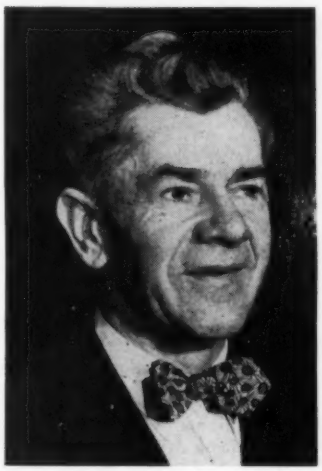
575 East Milwaukee Detroit 2, Michigan

fornia county and provides fire protection to industrial, residential, mountain watershed, and rural areas.

CLIFF DEKTAR

Hartman Made Secretary to Detroit Board of Fire Comrs.

Casimer J. Hartman, career fire fighter for the past 27 years, and charter member of the Detroit Fire Fighters Association, Local 344, I.A.F.F., A.F.L., was appointed Secretary to the Detroit Board of Fire Commissioners, and took office January 4, 1954.



Casimer J. Hartman

His appointment was approved by Mayor Albert Cobo. In approving him, the Mayor has given a top administrative position to a "man from the ranks" for the first time in the history of the Detroit Fire Department.

Hartman was born April 13, 1903, on the East side of Detroit.

He joined the Detroit Fire Department on September 22, 1926, and was assigned to Engine 14 at the old location on Scotten and Michigan. He served there 11 years, and then went to Ladder 9 for two years; Engine 22, for 3 years, and finished his career as an active fire fighter at Engine 27, as a Captain, until his appointment as Board Secretary.

Evansville Has New Fire Bureau

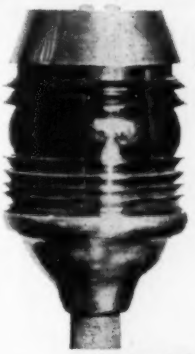
The newly created Fire Prevention Bureau of Evansville, Ind., held its first meeting Jan. 6th, at which time it adopted the National Board of Fire Underwriters' 1953 code on the handling of petroleum and explosive materials, as the regulations for the Bureau to enforce.

Fire Chief Charles Sensmeier is presiden of the bureau, by virtue of his office. Assistant Chief Lester Wells and Inspector Russell Shelton also serve, as part of their fire department positions. Mayor Robert's appointee to the new bureau is J. R. Moser, operator of the M. & S. Fire Extinguisher Service. The County Council's representative on the group is Councilman Henry Gonterman.

Incidentally, the new North Side fire station, long advocated by the N.B.F.U. and Indiana Rating Bureau, is assured through passage of a bond issue of $125,000.

J. A. KOCH

GADGET?



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to be the best buy for any emergency vehicle. Only Arguslite makes these lights with mountings to fit your needs . PUT your savings into useful equipment by specifying Arguslite Fresnels when ordering new apparatus.

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BLUE RIDGE SUMMIT, PENNA.

The new improved model MEMCO AERIAL LADDER is an economical all-metal ladder unit designed to be installed on existing truck or to be installed on new equipment by your fire truck manufacturer. Electrically raised and lowered by power from the truck battery.

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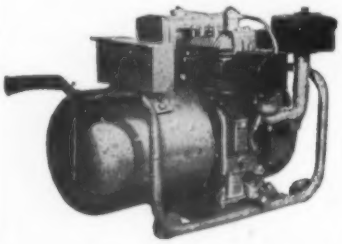
NEW . . . 2000 WATT
FIRE DEPARTMENT
ELECTRIC PLANT



Designed for operating floodlights, radio, pumps or blowers. Two men can carry it—and one man can wheel it around! 2000 watt 115 volt, A.C. Takes little space on the truck . . . only 22 x 18 x 20 inches high. Write for information on this and other Electric Plants built by "U.S." for fire department use.

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"Ranger" FLAME-PROOFED
FIRE FIGHTING TOOL

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Look at these features:

- ★ Flame Proofed Fibres
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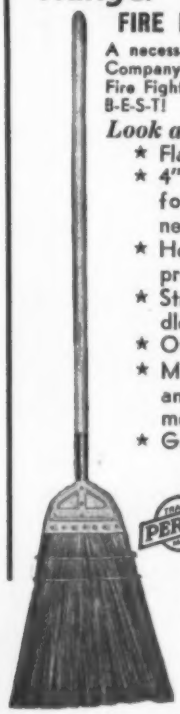

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Insist on PERFEX (Reg. U. S. Pat. Off.). If your dealer cannot supply you, write, giving your dealer's name, to:

PERFEX
41 Diesmore Place, Brooklyn 8, N. Y.

News of the Manufacturers

(*Continued from page* 140)

C-O-Two became affiliated, and C-O-Two moved east. Now, under Laswell as Vice President of both companies, sales, advertising and merchandising for all products will become unified.

Don O. Wood President of Fyr-Fyter

Don O. Wood, Executive Vice President and General Manager of The Fyr-Fyter Company since 1948, was elected President of the Fyr-Fyter Company and a member of its Board of Directors, according to an announcement made by William M. Wetzel, Chairman of the Board.

Don O. Wood

In announcing Mr. Wood's promotion, Mr. Wetzel paid tribute to the progress which The Fyr-Fyter Company has made under Mr. Wood's direction as Executive Vice President during the past five years.

Mr. Wood joined the Fyr-Fyter Company 31 years ago. Starting as an office boy, he progressed through the company's Service and Sales Divisions, serving both as Service and Sales Manager over a number of years. His election to President of the company and a member of its Board of Directors conforms to the company's policy of promoting men from the ranks to top management positions whenever practical.

The Fyr-Fyter Company located at 221 Crane Street, Dayton, Ohio, manufactures a complete line of fire extinguishers from the 1 quart to the 40-gallon size on wheels, and includes all the accepted types of chemicals such as carbon tetrachloride, CO_2, dry chemical and its "Instant" extinguisher. The company also operates a division at Wooster, Ohio, where fire hose nozzles, hose couplings and other brass goods used in the fire protection field are manufactured.

Alfco Adds New Line of Dry Chemical Extinguishers

A completely new line of pressurized dry chemical fire extinguishers incorporating advanced features has been announced by American-LaFrance-Foamite Corporation, Elmira, N. Y.

Models are: PDC-5, a 5-lb. unit without hose, and PDC-10, 20 and 30, which are equipped with rubber hose and transparent Alfco Discharge Nozzles. Model numbers designate capacities, i.e.: PDC-10, 10 lbs., etc.

All units are equipped with valve gauge to indicate working order. The manufacturer claims the new products are easier to operate, and service, and have greater extinguishing efficiency, with saving in dry chemical. The handle grip makes for easy carrying and maneuverability.

The line is pictured and described in a colorful new folder available upon application.

New Investor Aims for Mack Expansion

"Continuation and expansion of Mack operations under Mack's present management," have been declared as the objectives of Northeast Capital Corporation which was recently disclosed as holding approximately 300,000 shares of Mack Trucks, Inc., stock.

In a statement issued jointly by E. D. Bransome, Chairman of the Board and President of Mack, and William R. Kaelin, Chairman of the Executive Committee of Northeast Capital Corporation, it was announced that Mack stockholders would be asked at the next annual meeting in April to enlarge the Mack board from nine to eleven and elect the following directors of Northeast Capital Corporation as Mack Trucks, Inc., directors:

Mr. Kaelin, partner in Baker, Weeks & Co.; C. A. Johnson, President of Central-Illinois Securities Corporation; Harold L. Fierman, partner in Kaye, Scholer, Fierman and Hays, attorneys; Stuart Hedden, chairman of the Finance Committee of the Board of Trustees of Wesleyan University.

"This very substantial dollar investment by Northeast in Mack reflects Northeast's strong confidence in the future of the Mack Company," the joint statement declared. "From the point of view of the Mack management, such a strong stockholder interest is more than welcome."

Republic Advances Hughes

James M. Hughes has been appointed Manager, Distributor Sales for the Republic Rubber Division, Lee Rubber & Tire Corporation, Youngstown, Ohio.

In announcing the appointment E. M. Ikirt, Republic's General Manager, stated that Hughes would work closely with Republic Distributors to assist them in any way possible to secure a larger share of the rapidly expanding market for rubber products.

James M. Hughes

Since 1949 Hughes has been Sales Development Manager at Republic in charge of Advertising, Sales Promotion and Sales Training. He will continue to direct these activities. His entire business career has been in the rubber industry. After graduating from Michigan State College in 1936, he spent 11 years in various operating and sales

AN *Announcement* OF
TREMENDOUS IMPORTANCE
TO FIRE FIGHTERS

THE REVOLUTIONARY *NEW*
HYDROJET
AVAILABLE WITH KERMATH
61 H.P. SEA-JEEP ENGINE

This amazing new propulsion unit has been developed to propel craft without a propeller or rudder by taking water from outside the boat and discharging it as a high speed jet stream under the stern. A simple connection provides a high or low pressure water stream for fire fighting using standard hose. A Hydrojet powered boat operates efficiently in shallow water, in silt, debris, and in areas where ordinary fireboats cannot operate.

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A subsidiary of Barion Steel Corp.

The New Improved Dayton
COMBINATION
EXPANDER
6 FEATURES IN 1

Expander for Hose Sizes from ¾" to 3"
Greater Expansion Greater Economy
Easy to operate
Segments Furnished with Adjustable Spacer
Visual Indicator to Determine Amount of Expansion
BE PREPARED FOR ANY EMERGENCY
THE COST IS LOW
Send for Illustrated Bulletin

Dayton Fire Equipment Co.
1242-48 W. 2nd St., Dayton 7, Ohio

positions with The Goodyear Tire and Rubber Company. He was Assistant Sales Manager of the Pennsylvania Rubber Company, Jeannette, Pa., immediately prior to joining Republic. He is a member of the National Sales Executives and The National Society of Sales Training Executives.

Du Mont Enters Communication Field

A major expansion of Allen B. Du Mont Laboratories, Inc., into the field of mobile communications radio equipment manufacture was announced Jan. 12 by Dr. Allen B. Du Mont, president of the television and electronics company at its Clifton, New Jersey headquarters.

Dr. Du Mont revealed the formation, effective immediately, of a new Communication Products Division which will develop, manufacture, and market Du Mont mobile radio transmitter and receiver equipment and at the same time take over and greatly expand the activities of Du Mont's Television Transmitter Division.

"Entrance of Du Mont into the field of mobile transmitter and receiver communications," Dr. Du Mont stated, "signals another step in the continuing diversification of electronic products developed, manufactured, and marketed by Du Mont Laboratories. It launches the company as a major competitor on a nationwide basis in a broad new field with many major markets."

Some of the users of mobile communication equipment to whom Du Mont will market its new radio products include the following: police and fire departments, public utiilties, civilian defense groups, industrial radio installations in manufacturing plants, forestry services, etc. Herbert E. Taylor, Jr., who has been manager of the former Transmitter Division, has been named to head the overall activities of the new Communication Products Division," Dr. Du Mont said.

Ansul Promotes Baker

Ansul Chemical Company recently announced the appointment of Richard M. Baker as Advertising and Sales Promotion Manager. Mr. Baker, who has been with the company six years as Publicity Manager, is a graduate of Northwestern University.

Ansul also named Brad Sebstad as Publicity and Publications Manager. Mr. Sebstad is president of the Wisconsin Industrial Editors Association and a member of the executive committee of the International Council of Industrial Editors. He is a graduate of the University of Wisconsin's School of Journalism.

Held for Assault on Fire Chief

The North Kensington, R. I., Fire Department responded to three alarms on Christmas Day and while all were minor blazes starting from rubbish burners and igniting grass or brush, one could have resulted in a tragedy.

This fire was on the propery of Albert Achsner, Railroad Avenue, Davisville, and at this fire Henry C. Johnson, Jr., also of Railroad Avenue, rushed out with a heavy rifle and ordered Fire Chief Arthur H. Selley off his property. He emphasized the order by jabbing his gun forcibly against Chief Selley. The prodding was severe enough to send

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A new, better, APPARATUS PUMP!

Here's a pump you can be proud of! Delivers 150 GPM at 150 lbs. Beautifully designed and built by skilled New England craftsmen. Specify on new apparatus or use as replacement. Let us send you complete data and name of nearest dealer.

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WHY *Janesville* IS FIRST

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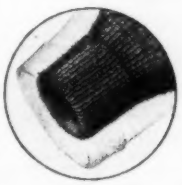

that firemen want and get in Janesville turn out suits.

You'll appreciate the flexible, set-in, roomy, sleeves with reinforced cuffs and wool wristlets that prevent the water from running down your arms.

Examine the other details of our fire coats and you'll see why the label **Janesville** stands for quality, protection, comfort and lasting service.

- Finest material
- Durable, easy to clean, corduroy collar
- Custom-built . . . coats available in any length wanted. Also sleeve lengths.

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Rate $8 per inch less 10% for three or more consecutive insertions.

Classified Advertisements

Closing date for copy 25th of month preceding date of issue.

! FIRE HOSE SALE !
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UNUSED SURPLUS

1½"x50'	8J CRL fire hose, unused but soiled	$ .26 ft. cpld.
2½"x50'	8J CRL fire hose, unused but soiled	.44 ft. cpld.

UNUSED & CLEAN FACTORY PACKED

1½"x50'	8J CRL fire hose.....$	.40 ft. cpld.
2½"x50'	8J CRL fire hose.....	.64 ft. cpld.
2½"x10'	Hard suction hose....	14.50 lgth cpld.
1"x50'	Booster hose	.30 ft. cpld.
4"x16'	DJ soft suction hose w/4½" cplgs long handle females	16.50 lgth. cpld.
1½"	Suction hose	.75 ft. cpld.
1½"x50'	Rubber covered water hose	.50 ft. cpld.
2½"x50'	Rubber covered water hose	.90 ft. cpld.
1½"x25'	Rubber covered water hose	10.00 lgth. cpld.
Wrecking bars, steel, heavy duty		2.50 ea.
Mechanical foam playpipes, Phomaire (Leading Manufacturer) (Cost $50.00 each)		8.50 ea.
2½"	Nozzle holders	.95 ea.

SPECIAL OFFER

Just Received

1½" Fog nozzles, Brass, 3 position-leading brands, unused cased perfect condition ..... 29.50 ea.

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Nationally known apparatus manufacturer has territories available in Mid-West and South. Write at once giving qualifications and experience. Box 100, c/o Fire Engineering, 24 West 40th St., New York 18, New York.

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to sell the amazing new SUPERIOR GRAY SMOKE BOMB: Small smoke bomb generates large volume of dense swirling gray smoke for training firemen, civilian defense volunteers, emergency and rescue squad members. Quick turnover, liberal discounts. Write for details.

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ATTENTION ALL FIRE DEPTS.

BLACK RUBBER and TURNOUT COATS FACTORY REPAIRED
TORN BOOT TOPS REPLACED,
—15 inches up from center seam, $4.25 pair.
SAVE MONEY. ALL WORK GUARANTEED.
We pay return parcels post.
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FOR SALE

REBUILT MACK 75-FT. AERIAL LADDER TRUCK with complete equipment. Tires about six years old, approximately 300-ft. ladders, including axes, extinguishers, battering ram, pike poles, siren, roof cutters, etc. For information write New Jersey Fire Equipment Corp., 100 North Washington Ave., Dunellen, N. J.

AHRENS FOX 1000-GALLON PISTON PUMPER, complete equipment including booster reel, booster hose, suction hose, ladders, extinguishers, axe, pike pole and all standard equipment. For information write New Jersey Fire Equipment Corp.

SANFORD 500-GALLON PUMPING ENGINE with approximately 300-gallon booster tank and all standard equipment. For information write New Jersey Fire Equipment Corp.

2 SQUAD CARS and 2 FIRE TRUCKS FOR SALE

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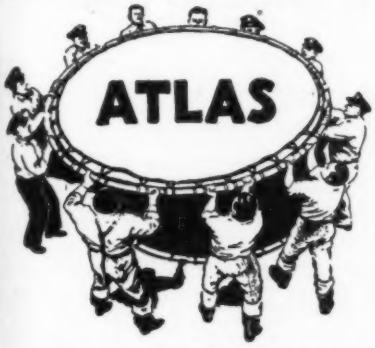

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the chief to the hospital for X-Rays on the following Monday.

Johnson, a well known well digger and dynamite man in the area, was taken into custody by police after the incident and was disarmed. He was arraigned before Judge Walter Orme at a special session of Second District Court and pleaded innocent to charges of assault with a dangerous weapon, and to interfering with the duties of a fireman.

Before his arraignment, he admitted that he had pushed the weapon against the chief's body and that the weapon was loaded, and had been for a number of years. He was released on $1,000 bail on the first charge and $200 on the second charge. It was also disclosed that Johnson in the past had had similar trouble with telephone, light and water company representatives.

On January 7, the case was brought up and Johnson was bound over to the grand jury on a charge of assault with a dangerous weapon. On a second charge, brought by the town police, he was adjudged guilty of having interfered with the fire chief's duties and sentenced to 20 days in Providence County jail with a recommendation for psychiatric examination. He was released on $500 bail on an appeal against the misdemeanor verdict and was continued in $1,000 bail on the grand jury count.

The Judge denied Attorney Anderson's motions for dismissals based on the lack of the rifle as evidence, and the fact firemen were not needed to quench the grass fire on property of Albert Oschner of 13 Railroad Avenue, from whose home the alarm came, and who it was said extinguished the burning grass and a fire started in a car seat cushion, with a garden hose.

Chief Selley and three department members testified flames still were shooting up when they arrived on the scene and were warned by Johnson, armed with a .38 caliber Winchester rifle. The irate man charged around the fire truck parked on his property line, and into the lane formed with Oschner's house, to jab Chief Selley, doubling him over, as he advanced to the backyard fire, all testified.

Anderson contended further that lack of proof a bullet was in the rifle chamber invalidated the dangerous weapon charge, but the Judge ruled that Johnson's admission on the stand that he had 12 bullets in a lever-operated magazine attached to the rifle qualified it as a "loaded weapon." The police chief testified, Johnson ejected a round from the gun after calming down. Johnson said he did not know Selley was the fire chief, and that he saw no identification and concluded his property was being invaded.

"I had three alternatives," said Johnson, "load the gun, use it as a bludgeon or poke him with it. I poked him with it," Then he said he loaded the chamber and "patrolled" his land until the arrival of Police Chief Moon who had been called.

Town Solicitor James H. Donnelly, prosecutor, stressed that firemen are never aware of the type of fire to which they are called. Their fire-fighting efforts were balked by Johnson, who told them to "go back to your pinochle game," it was testified. Donnelly contended khaki uniforms sufficiently identified the firemen.

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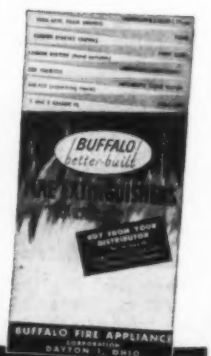

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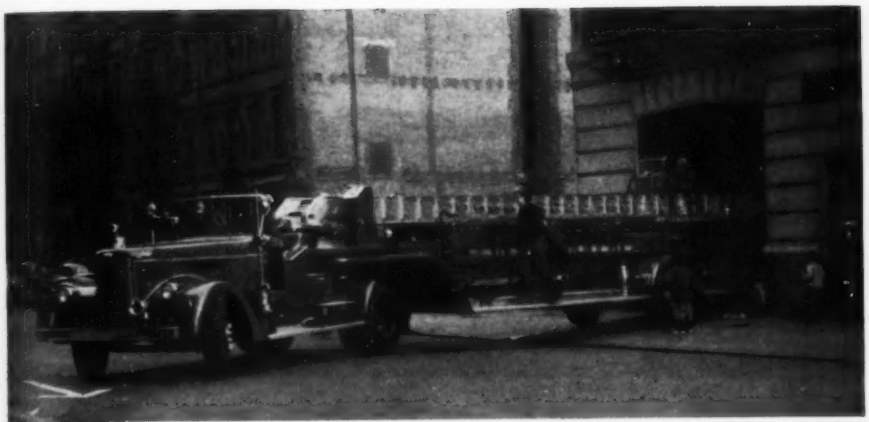

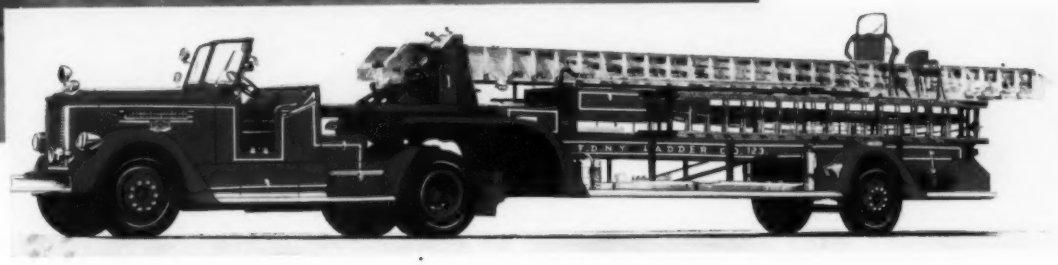

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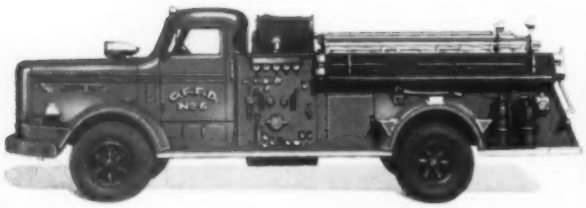

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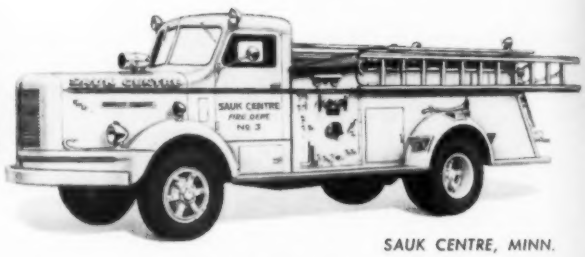

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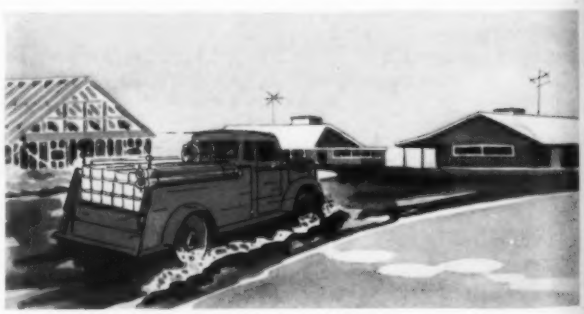

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